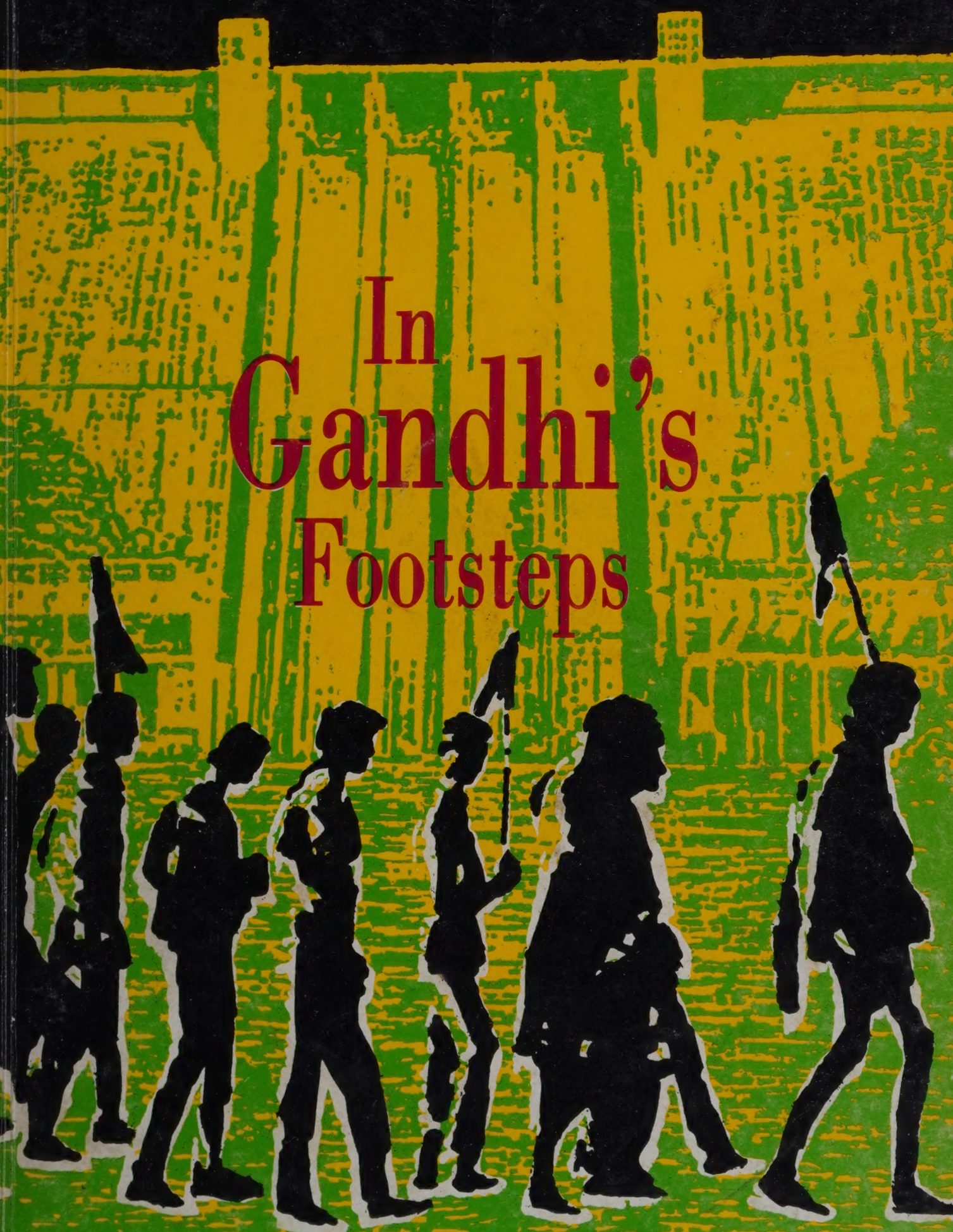
Library Edition/Other India Press Original
Not to be sold or taken away

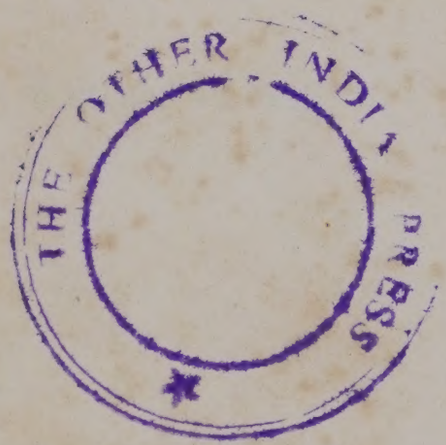
RAINER HÖRIG

In Gandhi's Footsteps



THE OTHER INDIA PRESS

In Gandhi's Footsteps



In Gandhi's Footsteps

By Rainer Hörig

The Other India Press
Mapusa, Goa.

In Gandhi's Footsteps
by Rainer Hörig

Originally published in Germany in 1995 under the title, *Auf Gandhis Spuren*, by Verlag C.H. Beck, Munich.
© C.H. Beck'sche Verlagsbuchhandlung (Oskar Beck), Munich, 1995.

English edition published in India by:

The Other India Press,
Above Mapusa Clinic,
Mapusa 403 507 Goa.

Copyright English edition © 1998 by Rainer Hörig

Translated by Jayant Vohra
Translation sponsored by Inter Nationes, Bonn
Photographs by Rainer Hörig

Cover design: Orijit Sen

Distributed in India by:

The Other India Bookstore,
Above Mapusa Clinic,
Mapusa 403 507 Goa, India

OIP policy regarding environmental compensation:

5% of the list price of this book will be made available by Other India Press to meet the costs of raising natural forests on private and community lands in order to compensate for the partial use of tree pulp in paper production.

ISBN No.81-85569-39-8

Printed by:

S.J. Patwardhan, Mudra, 383 Narayan Peth, Pune 411 030

For Rajashree,
who opened up many worlds to me

Word of Thanks

During my journeys through India, numerous people readily shared their knowledge and, often, even their feelings with me. This book would not have been possible without their co-operation.
Thank you.

Contents

1.	**Alternative Lifestyle: Five Years as a German in India**	1
	India: Myth and Reality from a German Point of View	4
	Hitler and the Autobahn: How Indians View Germany	5
	Learning from India	6
2.	**Wonderland: Civilisation and Technology in Ancient India**	9
	Highly Advanced Civilisation in Ancient Times	9
	Model for Europe	13
	European Colonialisation	15
3.	**Economic Power: Between Autarky and the World Market**	17
	Mahatma Gandhi: Reviving Traditions	17
	The Route to Economic Power	19
	World Market vs "Swadeshi"	22
	German Development Aid: Whom Does it Benefit?	24
4.	**Cultural Synthesis: Unity through Diversity**	27
	The Hindu Universe	29
	The "Small" Traditions	30
	Living in Sync with Nature	31
	Traditions Struggle for Survival	35
5.	**Our Land, Our Life**	39
	Empowerment and the Farmer	39
	Integrated, Sustainable Agriculture in Ancient India	42
	The Green Revolution in Trouble	46
	Back to Nature	49
6.	**Water is Might**	53
	The Narmada Project	54
	International Protest Movements	57
	Traditional Water Management in India	60
	Ancient Techniques for Present Day Needs	63

7.	**Who Owns the Forest?**	**66**
	India's First Inhabitants: the Adivasis	68
	The Nationalisation of Forests	70
	Destruction of Forests Leads to Poverty	72
	Ineffective Afforestation Programmes	74
	The Holy Groves of the Earth Mother	75
	Women Embrace the Trees	78
	People March to Save the Forest	81
8.	**Health For All**	**83**
	Traditional Holistic Healing	84
	Public Health Service Fails to Meet Objectives	86
	New Impulses to Revive Indian Folk Medicine	87
9.	**Mismanagement of Energy**	**94**
	India in a Global Greenhouse	96
	Unbalanced Energy Policies	98
	Energy without Greenhouse Gases	101
10.	**We are the People!**	**105**
	Gandhi's Legacy	107
	Cooperation Between South and North	113
	Bibliography	**118**

1

Alternative Lifestyle

Five years as a German in India

He caught me as I tried to enter the General Post Office, no doubt scenting easy prey. "You must be wanting to send a packet abroad! Give it to me, I'll pack it for you in cloth, for only twenty rupees!" I looked up and saw a middle-aged man whose figure barely filled the threadbare jacket he was wearing. He grinned tensely and straightened the baseball cap on his head. I answered hesitantly, "Well, all right, but I won't pay you twenty rupees for it, that's too expensive!" We sat down to bargain under an old fig tree.

He promised to do a first-rate job, I tried to get him to reduce his price by feigning impatience. I finally offered him fifteen rupees. He pulled out a misshapen piece of cotton cloth and began to measure the cardboard box. My suggestion that he use a larger piece of cloth went unheeded. His botching made me nervous but I tried to control myself because this was probably the only rag he possessed. To distract me, he started narrating his life story. Earlier, he used to assemble grenades in a weapons factory in the North; then he was a watchman for many years in Mumbai. However, he was fired because he was caught sleeping on duty. Now he can't find a job because he had never attended school. When the post office closes for the day, he peddles smuggled medicines, illegally distilled liquor, porn videos. "After all, one must use every opportunity to make money."

The cloth finally proved too small for the box so he was forced to rip up the seam again. The measurements began afresh. But I had lost my patience by now. My voice grew louder, I called him a good-for-nothing fraud. Passers-by stopped to watch and smiled with amusement, seeming much entertained. I protested and appealed to them to bring this dilettante to his senses. But they just grinned. Finally, just before I could explode, something dawned on me. All of a sudden, I too saw a funny side to the story. With each new patch, the packet was beginning to resemble a masterpiece. Its creator didn't show any signs of despair, rather he took every new failure as an opportunity to narrate humorous anecdotes and make surreal promises. I forgot the packet-packer and started listening to the storyteller. Slowly the smiles of the passers-by were reflected on my lips too. A spontaneous solidarity was established under that fig tree, bonded by the absurd humour of a petty scoundrel. "If a crow bombs your head, then be happy—it's lucky. My palm is itching again—money will come—I'll get lots and lots of money!"

Pic.1: *India is a country of 500,000 villages. Here people live like their ancestors used to. They draw self-confidence and calmness from their roots in large and small communities (family, caste, religion).*

Admiration and Horror: German Poets on India

German authors have been enthusiastic over the last two hundred years about the wonderland that is India, initially only from a distance. Johann Wolfgang Goethe described the drama "Shakuntala" by the Indian classicist Kalidasa as a perfect poem. Friedrich Schlegel learned classical Sanskrit and translated much Indian literature into German. The German Romanticists, who never saw this country with their own eyes, idealised India—in the words of Indian author Veena Kade-Luthra—as a "counterpart of the European world, as a cultural alternative, as a place of refuge from the pragmatic rationalism of western thoughts".

In the 18th century, Johann Gottfried Herder wrote: "The Indian places his bliss in a dispassionate calm, in an indestructible enjoyment of serenity and joy: he breathes an air of well-being, he swims in an ocean of sweet dreams and refreshing fragrances; as opposed to our opulence, for which we disturb and loot all parts of the world, what does he want, what does he seek?"

The German Indologist Friedrich Max Mueller (1823-1900) translated sacred Sanskrit works into English and thus made them well-known to a wide audience not only in Europe but also in their homeland. The Goethe-Institutes in India incorporate his name: they are called Max Mueller Bhavans.

It was only after the opening of the Suez Canal that German writers were able to experience India for themselves. In 1911 Hermann Hesse travelled by ship to Ceylon, Malaysia and Sumatra. He was disappointed that the image of India in his mind resembled his own yearnings more than it did reality: "I had to stop seeking Europe's redemption there, I had to stop being hostile to Europe in my own heart, I had to adopt the real Europe and the real Orient in my heart and soul..." Günter Grass also travelled twice to India. In Calcutta he wrote from his heart about how ashamed of Europe's affluence he felt there: "Zunge zeigen."

In Germany, the Indian myth was revived once again in the 60s. Drop-outs and hippies flocked to India to experience oriental wisdom and originality. Till today, the myth of the Romanticists has an influence on our image of India. The disappointment that Hesse and Grass experienced can still strike travellers who are not adequately prepared. India does not let anyone remain indifferent—admiration and horror often lie close to each other.

Source: Veena Kade-Luthra, *Yearning for India—A Reader from Goethe to Grass*, Verlag C. H. Beck, Munich 1993

India: myths and reality from a German point of view

"You've been living for five years in India!" German acquaintances remark with incredulity and a touch of concern. The assurance that I like it here is taken with a pinch of salt. From a German point of view, India often seems to be a poorhouse, a colossus crippled by outdated attitudes which is done for. For most Germans India is associated with political chaos, obscure customs and fatal diseases. "The special characteristic of the Indian image for Germans is that, on the one hand they observe a certain respect for the traditions and culture of the land, but on the other a deep contempt is also evident," writes Rajan R. Malviya, an Indian entrepreneur who has been living for many years in Germany. He has come to the conclusion that Germans at every level of education evaluate India in terms of clichés: the mentality and the caste system are to blame for the widespread poverty; the Indians should slaughter their holy cows so

Pic 2: *With a population of over 10 million inhabitants, Mumbai is ranked among the five largest cities of the world. Industrial units and trade houses of an aspiring economic power are concentrated here. The anonymity and hectic life of a big city rip apart many communities. A new, competitive society is emerging.*

that they can eat their fill; an unchecked libido is responsible for the population explosion. Very few Germans might be willing to say this out loud, but they think it all the same.

Indian journalist, Pankaj Chattopadhyay, also resident in Germany for many years, holds the German media responsible for this state of affairs. According to him, the reports on India revel in sensational stories of poverty, violence and corruption and simply gloss over the deformation of Indian society during the colonial era and the discrimination against India in the international economic system: "Instead of awakening solidarity interest in India, the reports tend more towards conveying the feeling of 'a hopeless case' and thus evoke unthinking resignation in a majority of the readers."

Private conversations with German residents in India always lead, as if by remote-control, to the great lament: people in India are no doubt very warm and helpful, but one just can't rely on anything here. The telephone lines and electricity supply break down all the time, the bureaucracy is steeped in corruption, the natives are too laid-back and hence unreliable. Certainly nothing works trouble-free in India, but that is the very reason that people are cordial and tolerant in their dealings with each other. When I visit an Indian friend unannounced, he drops everything else and offers me tea. The work just remains lying around a little longer. Friendship and neighbourly help are a hundred times more important to him than the mechanical performance of duty.

Hitler and the Autobahn: How Indians view Germany

We met on a night train to Bangalore.

"Good evening, are you German?" the young Indian asked. "Allow me to introduce myself, my name is Adolf!"

"Pleased to meet you!" I replied as a reflex. Thereafter I began to ponder. An Indian named Adolf? During the course of the conversation it turned out his father was an ardent admirer of Hitler and had therefore bestowed upon his son Hitler's first name.

The wretched dictator is still the most famous German in India. He is admired as a statesman who led his country to power and glory and weakened the colonial might of England. Like no

other, Adolf Hitler symbolises German discipline and will-power, traits that many members of the Indian middle-class miss in their own country. Rumours that Hitler supported the Indian freedom movement stubbornly refuse to die out.

When I first came to India in 1977, I cashed one D-Mark for three Indian rupees at the bank counter. Since then I have become rich because today the exchange rate is one to forty two. Just the colour of my skin makes me a rich man in India, attracts beggars and provokes businessmen to request me for assistance in the export of their products to Germany. Street-hawkers demand more from me since they know that I am in a better position to pay than most of their Indian customers.

In an opinion poll, Indian students who had enrolled for a German language course at the Max Mueller Bhavan in Pune marked diligence and honesty as the outstanding qualities of the Germans. These were felt to be the reason for their prosperity, manifested in Autobahns and Hi-Tech. The traits "friendly," "sensitive," "generous," were however generally not associated with Germans by the interviewees.

"I remember Germany as being cold," complains 20-year old Naznin, who worked for eight months as an au-pair girl in Frankfurt. "Many people there were sad, lived withdrawn and lonely lives. Germany is no doubt rich in luxury and material wealth, but it is poor in humaneness and sociability. It's exactly the opposite in India!" This opinion was expressed even before foreigners began to be beaten and murdered in Germany.

Learning from India

Germans love to think of themselves as achievers: achieve something in life, change the world, enjoy life actively up to an old age. We are proud to be leaders among the "industrialised nations" while the rest of the world strives to emulate us. Machines make our life easier, never have we enjoyed so much prosperity—for us! But today we know that "progress" has its own price. In a collective mania of "nothing is impossible," we have declared war on nature all over the world. We gouge immeasurable wealth from the depths of the earth but we cannot distribute this wealth equitably. Violence thus permeates an increasing number of areas in public and private life. In a daily struggle

for money and career, human emotions and qualities are left by the wayside. The westerner trains himself and his environment to be efficient. He calls this "progress".

In India there are limits to this progress. The cultural and ethnic diversity refuses to be unified in the name of efficiency and rationality. Attachment to traditions and religious customs opposes science's manic omnipotence. In the city, I have often observed a group of cows, chewing their cud and resting calmly on a busy crossing, oblivious of horns and engine noises. The motto here is live and let live.

Whenever I went to the post office, I found I wanted to quickly finish what I thought to be my priority of the moment. This obsession with goals almost made me lose out on a wonderful acquaintance and one that allowed me to perceive a humourous way of dealing with problems of efficiency. It opened up a new reality to me.

I think Indians go through life more relaxed than we Germans. Their perception, their feeling is more strongly oriented to the "here and now," because they believe that this life is only one of many. Till the attainment of Nirvana, the soul will pass through thousands of lives more and hence one does not need to achieve all goals at one go. Meanwhile, in Europe, each moment passes irretrievably and history moves forward linearly into an unknown future. Indian time advances in circles. Everything returns to the origin at some point of time or the other. The Hindi-word *kal* means both "tomorrow" as well as "yesterday." The movement of time is slower in India. Outside the big cities, life is generally unhurried and free of stress.

In German households, the skin on heated milk is thrown in the garbage; Indian housewives collect the cream and make clarified butter (*ghee*) out of it. Ghee is said to be a gift of the gods and can be stored for weeks even without a refrigerator. Long before the Germans discovered the "Green Point", millions of Indian families were habitually collecting glass bottles, newspapers and scrap material and selling them to second-hand dealers. It was only in India that I discovered how we Europeans squander foodstuffs and natural resources.

Upon conversion into rupees, my mark—earned in Germany—acquired ten times its purchasing power. I feel all the more ashamed when I again stand, helpless, face to face with

the outrageous poverty of many Indian families. Give alms, yes, of course, but how does it help? I gladly give a little more than what is usual in the vegetable market or for favours, but that is just a drop in the ocean. I feel fortunate that my profession allows me the opportunity to give poverty a public voice.

My Indian wife works as a teacher. She and her relatives are willing to make do with old utensils that have often been repaired several times, while my German consumer habit tells me: "Throw away and buy new!" Consequently, it's not very uncommon that a discussion on a new purchase leads to a serious marital quarrel. India now teaches me to be more modest and frugal. A very useful lesson because if all 900 million inhabitants of this huge country were to squander their limited resources in the manner in which we in our "civilised" western world are accustomed, humanity would be soon extinct.

2

Wonderland

Civilisation and technology in ancient India

Tourist buses line up in front of the gate leading to the medi aeval mosque (Qutub-ul-Islam) (victory of Islam). The fortified mosque is said to be the oldest existing monument in the Indian capital. Its completion in the year 1198 AD marked the beginning of five centuries of Muslim rule in India. At that time, Allah's kingdom stretched west all the way to Spain.

Today, with comical contortions, foreign visitors try to capture the 73 metre high minaret, the victory tower, with their cameras. Then they walk towards the Gupta pillar for the test of luck. Legend has it that he who can stand with his back to the pillar and encircle it with his hands will have a carefree life. Most people are successful. "This iron pillar is 1600 years old," explains the guide. It was cast in memory of Emperor Chandragupta Maurya II in the classical Hindu-era, as the Sanskrit-inscription testifies. It is said to have magical powers. It is almost a miracle that its iron has remained rust-free for over 1600 years in a tropical climate. Even modern science is not in a position to explain this mystery!"

Highly advanced civilisation in ancient times

Even prior to the turn of the Christian era, South-Indian merchant ships sailed the seas from Arabia to the south-east Asian Archipelago, spreading new technologies and the Hindu religion. Chess, considered a royal game, originated in India. Arab merchants carried the number zero, indispensable for the

computer industry, from India to Europe. For centuries, India was the leader in steel production. In the mediaeval ages, Indian textiles were known to be unsurpassed in quality and colouring. The country's ancient and holistic system of medicine is now gradually finding recognition in the West.

The society that boasted such remarkable achievements did not in any way resemble present-day paradigms of efficiency. As opposed to modern scientists, Indian scholars perceived the world as a living organism within which each and every creature is dependent on the other, including the human being. Astronomy and mathematics arose from a deeply-felt spirituality which worshipped creation and the planets in the form of deities whose influence on human life was considered natural. Current achievements in medicine, agriculture, metallurgy and textile manufacturing are to be seen as the result of centuries of collective experimenting which did not manifest in a naked pursuit of profit and could therefore exist without patents. The caste system of the Hindus created a differentiated division of labour and led to the rise of professional groups of experts, within which all innovations were exchanged freely.

The earliest evidence of Indian metalwork dates from before 2500 BC: solid figures, cast in bronze and copper were excavated from the ruins of the Indus valley civilisation. The oldest Indian iron products, discovered in the south of the subcontinent, are nearly 3000 years old. Later, Indian Damascus-swords became world-famous for their quality. Even in ancient times Indian farmers had developed a system of irrigation consisting of wells and canals for their fields. They developed methods of biological pest control and used natural fertilisers. Indian physicians continuously refined their knowledge of the human body and medicinal herbs. Astronomers carried out exact calculations of planetary orbits and developed a unique system of mathematics.

During Emperor Chandragupta Maurya's reign (*see box*), most of the cities were located on the banks of rivers and were surrounded by fortifications and moats. The ruler's palace and the city hall were situated in the centre of the complex. The cult site and the houses of the Brahmins, who constituted the priestly caste, stood alongside the city tank. Craftsmen, farmers and labourers lived in thatched mud huts on the outer fringes.

In the Mauryan Empire

The Greek diplomat Megasthenes lived as an envoy of King Selenkos—who administered the Asian conquests of Alexander the Great—in the court of the Emperor Chandragupta Maurya (322-298 BC). Megasthenes reported on the Indian ruler:

"When he appears in public, it is mostly astride a huge elephant powdered with gold dust and richly decorated with precious stones. Gold and precious stones are also the preferred decoration of the palace and meals of indescribable delicacy are served in golden plates on golden tables. The gardens around the palace are filled with the intoxicating aroma of oriental flowers and parrots, doves and peacocks can be seen everywhere.

One should not, however, believe that this enormous luxury of the ruler has been bought with the poverty of his subjects—on the contrary, public prosperity is, as I have been able to always ascertain, positively widespread! There is an immense variety of goods in the markets and trade between the various parts of the empire is flourishing....".

Source: "Megasthenes lernt das Staunen", in: *Geschichte mit Pfiff—Das alte Indien*, Johann Michael Sailer Verlag, Nürnberg 1983.

One of Emperor Chandragupta Maurya's advisers, the Brahmin Kautilya, compiled earlier writings and his own knowledge into a classical political theory known as the "Arthashastra." This work, which is still widely read in this day and age, contains one of the few descriptions available of governmental structure and administration in ancient India. According to it, the Emperor ruled with the help of an advisory team of seven members, of which three were Brahmins and four were members of the nobility. He maintained an army of 600,000 soldiers which was equipped with horses and war elephants, chariots and ships. His representatives controlled trade and industry, collected taxes and supervised the imperial possessions of mines, forests, land and workshops.

The State's municipal duties were limited to the few temples and palace centres. Since there were no officials in the European sense of the term, tax collectors also exercised police powers. The Brahmins were also responsible for the administration of justice. In the peripheral areas of the empire, the tax responsibility gradually merged into the independent power of the tributary rulers. Villages formed economically independent units

A LIVING TRADITION—THE POTTER WOMAN SARABEHN

Tucked away in a corner of Western India, the peninsula of Kutch stretches as an extension of the Thar Desert into the Arabian Ocean—a stony steppe landscape covered with bramble and grass. Agriculture here is a one-season affair and consequently many families earn an additional income by manufacturing traditional utensils: Kutch is famous for its colourful handicrafts.

The road leads us over sand dunes, through dry river beds, past camel herds, till we reach Lodai—a small, dusty market town. There, in a courtyard surrounded by mud huts, we meet Sarabehn, a Muslim woman in her fifties. She quickly brings colourfully woven carpets from the house for us to sit on and invites us to relax with a cup of tea. She introduces her family: husband Ibrahim, three married daughters and their children. She then presents a threadbare photo album and we reminisce fondly about the Crafts Museum in distant New Delhi, the place where we met each other many months ago.

I want to know how work is progressing. "Well, we can't live on pottery alone," smiles Sarabehn with deep furrows on her face. "We do have a small piece of land, but the money just isn't enough to make ends meet. Everything here depends on the rain. If the rains are good, people earn well and come to us to buy new pots and pitchers. Recently even foreign tourists who like my work have been coming here."

Sarabehn paints pots, vessels and pitchers which Ibrahim makes on a hand-driven wheel. She draws geometrical patterns, stylises flowers, peacocks and human figures. Her black and the white paintings merge in rustic harmony with the brick-red of the clay. Sarabehn succeeds in imbuing items of everyday use with the austere beauty of her land. She is one of a hundred thousand unknown talents who nurture ancient traditional crafts in India's numerous villages. Sarabehn's work resembles the pottery that was excavated in the cities of the ancient Indus valley civilisation. Sarabehn is continuing a tradition that is 4000 years old.

Today Sarabehn has to compete against plastic buckets and metal plates which are now available in the market at Lodai. Fifty million artisans still live and work in India but industrialisation has already forced many to give up their craft and become helpless daily wagers. The government is trying to ensure a steady income for them through national agencies such as the Khadi and Village Industries Commission, but with limited success. In the financial year 1993/94, India earned Rs.18 billion or DM 1 billion through handicraft exports. Only a small fraction of this sum actually trickles down to the artisans themselves. Consequently many artisans are forming self-help groups and are independently organising the purchase of raw materials and the marketing of their products.

within which goods and services were exchanged in a barter system. Ownership of land and other natural resources was unknown. Instead, individual farmers and the village community exercised the right to utilise soil, water, forest and pastures. However, the final control of these resources lay in the hands of the ruler.

Model for Europe

India's history tells of the rise and fall of large and small kingdoms, each of which gave rise to unique cultural characteristics and technological innovations. Under Islamic rule, after 1200 AD, India developed into a global exporter. Arabian merchants carried Indian textiles, the famous Damascus-swords, precious stones and jewels, wood and ivory carvings, spices such as cinnamon, pepper, clove and aniseed to Europe. The legendary wealth of the subcontinent ultimately attracted sailors such as the Portuguese Vasco da Gama, who was the first European to discover the sea route to India. In 1498 he landed at the port of

Pic 3: *The stone observatory "Jantar Mantar" in the centre of New Delhi was built by Maharaja Jai Singh II in 1728 as a replica of a similar construction in his capital Jaipur. With the help of several of these constructions, the movement of the planets can be exactly determined.*

Calicut in present-day Kerala, more successful than his colleague Columbus six years earlier.

Later, European explorers reported remarkable technological achievements which they had observed in India. The Indian author Dharampal has found numerous examples of such reports in Indian and British archives. These documents were given hardly any importance in Europe at that time because they contradicted the spirit of the times which glorified Western civilisation as the spearhead of human evolution. "By the 1820s or so, most of the non-European world had become, at least in European theory and most history texts, if not altogether in actuality, backward and barbarian," writes Dharampal.

He cites reports of British researchers that describe complicated observatories made from bricks and mortar. From the year 3102 BC Indian astronomical charts had been documenting the exact position of planets. Indian scholars were aware of the existence of Saturn's seven moons long before they were "discovered" by their European colleagues. The British mathematician Reuben Burrow (1747-1792) found clues that Indian scholars had, for centuries, actually been familiar with the Binomial theorem, which is generally said to have been discovered by the English physicist Sir Isaac Newton (1643-1727).

In the 19th Century, the arts of surgery as well as smallpox vaccination were widely known in India. Even in those days, Indian artisans produced paper and artificial ice. It was from them that Europeans learnt how to effectively caulk ships' hulls with natural resins. Indian farmers were second to none as far as artificial irrigation, crop rotation and the use of natural fertilisers and sowing implements were concerned. At the end of the 18th Century there were around 10,000 small furnaces in operation which smelted a total of 200,000 tonnes of iron per year. A British expert analysed samples of the Indian "wootz-steel," which was used to make the legendary Damascus-swords, and declared: "Indian steel is definitely the best that I have ever seen." The manufacturing process for wootz remains a mystery till today.

European colonisation

Once the sea route to India was discovered and protected against Arabian competitors, the Europeans set up branches on the Indian coast in order to secure cheaper imports. The Portuguese established themselves using coercive methods in Goa; the French gained a foothold in Pondicherry; the Dutch in Ceylon and the British in Madras and Calcutta. The latter exploited rivalries between native rulers, created "protectorates" and continuously extended their area of influence using force and negotiating skills. In 1818, after the victory over the Marathas, Great Britain ruled the entire subcontinent. The colonial power imposed an alien administrative structure on India, introduced the British educational system and British production methods, including the monetary system. For the sake of more effective taxation, community possessions of land and property were trans-

Pic 4: *"Budha chacha", old uncle, is what the patriarch of Kumbhar Wada, the potter's colony in the city of Bhuj in the Kutch peninsula, is called. Customers come from all over Gujarat to buy his vases, bowls, lamp-holders and pitchers. Yet he has to run a transport business with donkeys and a small truck to be able to feed his family.*

ferred to private ownership or were nationalised. Entire tracts of land were deforested to provide wood for the construction of battleships and railway lines. The government forced thousands of farmers to plant indigo, opium and cotton for exports, obviously without consideration for the consequent loss of farmland that was required for the production of grain. "Our industry was deliberately destroyed," claims the Indian scientist and author Winin Periera. "Earlier, most of the regions were, to a large extent self-sufficient; there were specialised castes of artisans in each village. In almost all households, women spun yarn from cotton. It is estimated that in those days small industries provided a quarter of the population with work and food."

The destruction of entire branches of crafts drove hundreds of thousands of families into wage labour for large landowners, forced wages down and increased the burden on natural resources. High taxes and production shifts also burdened agriculture. Moreover, the nationalisation of forests and the concomitant prohibitions deprived the rural population of free and easy access to raw materials. Gradually even the traditional communities, which used to guarantee the villagers economic security during times of need, began to disintegrate. Devastating famines were one of the consequences of these changes.

However, after 650 years of foreign rule by Turks, Arabs, Huns and Europeans, the Indian soul woke up once again towards the middle of the 19th century. In 1855, the Santal tribals revolted against the burden of taxes and the loss of land. Two years later the Indian "foot soldiers" of the British Colonial Army mutinied in the whole of North India. British soldiers were forced to march out in almost all regions of the subcontinent to quell uprisings by farmers, artisans, and forest dwellers. Inspired by the translations of European researchers, Indian intellectuals studied their country's sacred scriptures which had remained buried for centuries. The confrontation between Indian wisdom and European thought ended in a renaissance and a reformation of traditional values.

3

Economic Power

Between autarky and the world market

Above all, it was in those areas where people saw a threat to their means of existence that opposition to colonial rule assumed massive, and sometimes violent, overtones: the Adivasis rebelled against the destruction of their forests; farmers protested against high taxes and land-grabbing; artisans boycotted British industrial products.

In 1885, the Indian National Congress (INC) was constituted in Bombay. The INC brought the numerous regional protest movements together and gave them a political voice. Under its guidance, millions of people participated in the freedom struggle—the largest human rights movement of our century.

Mahatma Gandhi—reviving traditions

Mahatma Gandhi entered the Indian political arena in the year 1915. After studying law in England, he developed civil disobedience as a form of protest during his struggle against the apartheid regime in South Africa. With spectacular campaigns, he galvanised the Indian population into fighting to preserve traditional rights. As they became conscious once again of their rich cultural legacy, people gained the strength to oppose a colonial power which seemed overwhelmingly superior. For Gandhi, however, India's freedom was not to be realised merely with the withdrawal of English troops. "The foreign power will be withdrawn before long," he said to an English woman in April 1947, "but for me real freedom will come only when we free

ourselves of the domination of Western education, Western culture and Western way of living which have been ingrained in us, because this culture has made our living expensive and artificial both for men and for women. Emancipation from this culture would mean real freedom for us."

Gandhi called this real freedom "Swaraj", translated today as "self-determination." To attain this goal he urged the people to realise Swadeshi—economic independence. Gandhi called upon his followers to once again adopt the tradition of spinning—the old crafts had to be revived in order to liberate India from the import of British industrial products, such as textiles.

Pic 5: *The administrative building of the public sector oil company, Hindustan Petroleum, towers over Gandhi's statue in Mumbai's government complex. India did not follow the developmental ideas of the "Father of the Nation", rather it invested all energies into the quickest industrialisation possible.*

The *charkha,* or the spinning wheel, became the symbol of the freedom struggle.

"I hold that the machinery method is harmful when the same thing can be done easily by millions of hands not otherwise occupied", Gandhi wrote on 2nd July 1931 in his publication "Young India". And further: "It is any day better and safer for the millions spread in the seven hundred thousand villages of India scattered over an area nineteen hundred miles long and fifteen hundred long that they manufacture their clothing in their own villages even as they prepare their own food. These villages cannot retain the freedom they have enjoyed from time immemorial, if they do not control the production of prime necessaries of life. Western observers hastily argue from Western conditions that what may be true of them must be true of India where conditions are different in so many material respects. Applications of the laws of economics must vary with varying conditions."

As the hour of independence drew closer, it became clear to Gandhi that a majority of his co-fighters nursed different images of a free India. On 21st July 1946 he wrote: "I do not know how many swear by non-violence or the *charkha* or, believing in decentralisation, regard the village as the nucleus. I know on the contrary that many would have India become a first-class military power and wish for India to have a strong centre and build the whole structure around it."

Gandhi wasn't mistaken. Eighteen months later, on 30th January 1948, he was assassinated by a Hindu fanatic. His political ideals were soon forgotten, and India began to develop in a manner he had feared. Today, the image of Gandhi is misused as an icon and he is referred to as the "Father of the Nation" to lend credibility to official functions.

The route to economic power

On 15th August 1947, at midnight, an hour pronounced as auspicious by astrologers, India declared itself independent. She was one of the first colonies to do so. The Congress Party, which emerged out of the independence struggle, nominated Jawaharlal Nehru, a long-time comrade of Gandhi, as the first head of the government. Nehru's interpretation of the national goal of

swadeshi differed from that of his mentor. According to him, India had to first develop an industrial base in order to gain economic independence and the State was best suited to execute this task.

There arose, in the 50s and 60s, huge public sector undertakings in the sectors of steel, mining, energy and mechanical engineering. Nehru's government protected these undertakings against foreign competition by levying high import duties, thereby ensuring their monopoly. Private entrepreneurs were allowed to function only in the areas of consumer goods, services and agriculture, and that too only under a complicated license system which regulated manufacturing processes, production quantities and sales prices. The government appointed leading experts of the country to a national Planning Commission, which prepared 5-year plans to implement various schemes for economic development. All over the country large research institutes for the in-house development of new technologies were created and supported by the Central Government, but the economic and administrative structures of the colonial period remained more or less intact. "The slogan of economic development gained admission where colonialism ended," wrote the Indian scientists Vandana Shiva and Jayanta Bandhopadhyay. "Unfortunately, for the newly-constituted Indian government, there was no other mechanism other than the classical development model left behind by the British with which to answer the increased expectations of the Indian people for a better life. The same institutions and concepts that were maintained and developed by the colonial rulers were now used for purposes that stood diametrically opposite to those of the colonial period."

Admittedly, the Nehru government did strive to create social equity. First, the feudal lords, the Maharajas, were deprived of their power. Then land reforms were implemented to distribute farmland more equitably and to provide the landless with their own plots of land. The government engaged itself actively in the setting-up of farmer co-operatives and hoped to eliminate the notorious middle-men and Shylocks—the last pillars of the feudal system. Using a quota system, the state reserved jobs and seats in education for the poorest of the poor, with the intention of facilitating their entry into modern sectors of the economy.

However, not all social groups were in a position to reap

the benefits of progress. The demand for resources and space by an expanding industry deprived the rural population of essential resources such as water, firewood and farmland. Millions of Adivasis lost their land to government projects for the construction of large dams, mines and industrial complexes. A society that was already divided into innumerable castes and subcastes split in two groups: the haves and the have-nots.

Towards the end of the 60s, the state-controlled economy faced a severe crisis. Land reforms had not achieved the desired results because most large landowners had divided their land among their numerous relatives and also because the small farmers could not be protected against the repeated loss of their land. Thereafter, the so-called Green Revolution, which introduced modern industrially-supported farming in the sixties, sharpened social disparities in the villages. In the states of West Bengal, Bihar and Andhra Pradesh, Adivasis and other landless people rose under communist leadership, killed landowners and distributed their land. The police and paramilitary forces quelled

Pic 6: *Every day hundreds of migrants arrive in Mumbai who have been driven from their lands by environmental catastrophes or by greedy landlords, often also by large developmental projects (dams, highways, industrial complexes). Even if they find just a tent or a sheet over their heads, for them, Mumbai is paradise.*

the revolts ruthlessly. Sustained strikes and rebellions led to a two-year Emergency period from 1975, during which Nehru's daughter and successor Indira Gandhi silenced any sort of opposition whatsoever.

Today, India has become one of the ten leading industrialised nations of the world. Industry and the services sector together account for 70% of the gross national product. A few Indian companies have grown into multinationals. With production sites for computers, satellites and nuclear power plants, India has assumed the position of a technological leader among the countries of the South. Yet, the scale of poverty has not diminished—nearly 40% of the population—that means 350 million people—still live below the official poverty line.

World market vs *swadeshi*

By the sixties it had become clear that Nehru's socialistic and planned economic policies had exhausted their potential. The "license raj" bred corruption and nurtured a well-organised black market. Many leading industrialists were able to gain a monopoly through manipulation and bribery. Efficiency and quality took a back-seat. Even more ominous: the country's external debt rose to more than $70 billion. Today, India is the fourth most indebted country in the South. *Swadeshi* has been pushed into the distant future. In order to remain solvent, the government has had to take loans worth billions from the IMF, and it is well known that borrowing from the IMF involves adhering to rigid conditions.

The Soviet Union and its allies had waived currency payments in dealing with India. Therefore, the disintegration of the U.S.S.R. led to considerable setbacks in Indian exports. New Delhi was left with no option but to integrate itself more strongly with the West. In June 1991, Prime Minister Narasimha Rao took up office with a programme of comprehensive economic reforms. Since then, the huge Indian market has been opened to foreign investors. Finance Minister Manmohan Singh eased duties and license regulations and tried to reduce the budget deficit by reigning-in public expenditure. His objective was to lead the Indian rupee, step by step, to full convertibility. State-owned enterprises were to be rationalised and partially privatised. Export-oriented

units were granted tax exemptions and duty privileges by the government. The IMF's handiwork is clearly visible in the reforms programme.

While the liberalisation of the economy has been welcomed in industry circles and in large sections of the middle class, opposition is brewing against it in unions, in the agricultural sector, and in the bureaucracy. The once-powerful officials of public steering committees are concerned about losing the substantial benefits that flow to them through grease money given in return for favours relating to licenses. Unions are protesting against the restructuring of public sector undertakings, which they fear will lead to the loss of thousands of jobs. In view of India's integration with the world market and the eagerness for new industrial projects, farmers sense their influence in politics waning. In order to silence his critics, finance minister Manmohan Singh increased the outlay for rural development and employment generation programmes in the 1994/95 budget.

In spring 1994, the topic of GATT dominated public discussions in India. Swadeshi was once again a buzz word. Nearly all opposition parties organised protest rallies across the breadth of the country. The National Alliance of People's Movements, which represents seventy five grass-root organisations, warned against the sell-out of natural resources to foreign companies. The background: the new foreign trade policy, which was formulated in association with the economic reforms and the GATT—agreement, promotes, for the first time, the export of all types of natural resources: from wild plants and their seeds, to livestock and cattle fodder. According to critics, this would further accelerate the already alarming environmental degradation, render the rural population even poorer, and make famines a distinct possibility. A study, prepared by Indian scientists on behalf of the UNDP, supports these arguments. According to the study, the liberalisation of the economy and the reduction in state subsidies would intensify poverty and reduce employment opportunities. India is today more dependent than ever on the vagaries of the world market. The National Alliance of People's Movements is now threatening to organise a new struggle for India's independence.

German developmental aid—whom does it benefit?

In a somewhat delayed response, politicians and economists in Germany have woken up to the potential of the emerging markets in South and East Asia. It is certainly not entirely a coincidence that the Federal Cabinet passed a new draft concept for Germany's Asian Policy in 1993, the year of the most severe economic crisis in post-war years. In this new draft, India is expected to act as a bridge between the East and the West.

German economists, together with top politicians in Bonn, are encouraging the Indian government to swiftly realise the goal of a "free market." Leading German companies already have production sites in India or are entering into collaborations with domestic licensees. In a memorandum, presented by the Federal Association of German Industry (BDI) to the Indian Prime Minister on the occasion of his visit to Bonn in February 1994, top German industrialists recommended the elimination of existing "investment obstacles." According to the BDI, these include among others, the environmental impact assessment for new factories, restrictions on the acquisition of land, and the extraordinarily far-reaching protection of factory workers against dismissal. German companies would like to extend the scope of their activities in India to mining and railways, which till now were reserved for Indian public sector enterprises.

For many years India has been the leading recipient of German development aid. During governmental negotiations in May 1993, the Federal Ministry for Economic Co-operation and Development (BMZE) promised DM 392.5 million to its Indian partners, of which DM 177.5 million were given as grants and the remainder in the form of soft loans. The focus of co-operation is on the supply of technical equipment for large industrial plants as well as on the training and further education of technical personnel. Two mega-projects—Rourkela Steelworks (*see box*) and the Neyveli lignite plant—earned lucrative contracts for German industry.

Today development politics is facing an identity crisis. After the end of the Cold War, the West has no longer felt compelled to provide aid to the countries of the South in order to prevent them from drifting into the enemy camp. During the last 30 years, it has not been possible to wipe out the large-scale

German Developmental Aid Displaces Adivasis: The Rourkela Steel Plant

In the late fifties, Indian and German government representatives signed an agreement concerning the construction of a modern steel plant in Rourkela, a remote and unknown Adivasi village that lay in the wooded highlands of Orissa. A consortium of 35 large German companies, led by Krupp and Mannesman, supplied construction machinery, blast furnaces, mills and tools. Sometimes there were as many as 2000 German technical personnel on the site. Since 1961 the blast-furnace plant, belonging to the public sector undertaking SAIL, has been producing fine sheets for cans and automobiles which would otherwise have to be imported against foreign currency. The Bonn government made almost a billion DM available—the single largest project of German development aid to date. In 1993 Bonn granted a further credit of DM 150 million for continuous improvement measures, which once again will mainly be carried out by German companies.

In the years gone by, representatives of Rourkela's Adivasi population have repeatedly petitioned the concerned ministry in Bonn, deploring the predicament of the Adivasis who have been displaced by the construction of the steel plant. Their complaint is that, the Indian government has failed to provide tribals with a new economic base and a majority of them are thus forced to lead a life of penury as daily wagers in the slums of the new industrial city. In their opinion, Bonn also shares a responsibility for this situation and is morally obliged to influence the Indian authorities in the interest of the displaced people. The appeal has gone unheard in the long corridors of the government.

Source: Rainer Hörig, "Verdrängt von Rourkela", in: *epd—entwicklungspolitik* 8/93 (April), Evangelischer Pressedienst, Frankfurt/Main 1993.

poverty in the South. Environmental degradation on a global scale is bound to aggravate the situation.

The UN-Conference on Environment and Development, held in Rio de Janeiro in 1992, has sharpened awareness of the close association between the destruction of nature and the rise of poverty. German development politics now have new objectives. "As a whole, plans for poverty alleviation, education, health (including family planning) and conservation of the environment and natural resources should be given first priority in the future", says the "Brief Report: India", published by BMZE. Its

India-programme now covers ecologically-oriented projects: development of water catchment areas, integrated forest management, protection against erosion, solar energy plants. However, currently only twenty three percent of the total funds go towards such projects. Approximately fifty five percent of German investment in India continues to be devoted to large industrial projects which, as experience has shown, destroy nature and uproot the local inhabitants.

Federal Minister Carl-Dietrich Spranger maintains a very broad interpretation of the concept of poverty alleviation. He distinguishes between ad hoc measures to eradicate the current problem and a long-term programme: "There is the extended concept of poverty, that also includes infrastructure—which, after all, is a pre-requisite for economic progress, and economic progress is also a pre-requisite for poverty alleviation. The belief that poverty can be eliminated by distributing what we have is a fatal mistake." Infrastructure for poverty alleviation: does this mean new power plants, roads, dams which will once again uproot innumerable people and drive them into destitution? Or does he refer to the development of wind energy, solar energy and biogas instead?

Independent experts, missionary organisations and citizens' action committees have for long been urging a change in Germany's policies vis-à-vis the South: according to them, development should no longer be considered in terms of increasing the GNP and the exports of a country. Politics should finally focus its developmental efforts on people and their acute day-to-day problems.

The economic crisis in the industrialised countries has made it increasingly clear that development policy cannot refer to developing nations only. Taking the catchword "global village" seriously requires a redefinition of the concept of progress, and is to be understood as a two-way process. Once and for all, the North has to give up its attitude towards the South and lead the way with reforms of its own. The promises made by Federal Chancellor Helmut Kohl in 1992 in Rio de Janeiro are yet to be fulfilled.

4

Cultural Synthesis

Unity through diversity

Have you heard of the *Ramayana*, the legend of Rama and Sita?" a young man asks me. "You can follow their footsteps here. Over there, where their hut once stood, now stands a temple." The tourist guide introduces himself as Vivek Anand, son of a Brahmin family. From the time Vivek was a child, he had listened to his father narrate the adventures of Prince Rama and his wife Sita, who were driven out of the North Indian city of Ayodhya by intruders. For years they roamed the subcontinent. Finally, they settled here in Panchavati, in present-day Maharashtra, to pray and meditate. However, one day Sita was abducted by the Demon-king Ravana. The classical epic *Ramayana* narrates how Rama, with the help of the monkey-god Hanuman, was successful in freeing his wife from captivity.

Vivek Anand leads me to the bathing spots along the river. Countless pilgrims flock there between temples and flower-sellers. Farmer's wives, businessmen, holy men go down the stairs into the water. In the middle of the crowd there is an old man with long hair and a beard. He scoops water with both hands from the river and allows it to fall back over his finger tips, accompanied by prayers. It is a sensual homage to the river goddess, the giver of life.

"This river is called Godavari," explains Vivek. "On this bank is the village Panchavati, on the other side the industrial town of Nasik. Every twelve years the Kumbh Mela, one of India's most significant festivals, is held here. Holy men from all over the country have come here—sadhus, gurus, rishis, even

lay pilgrims. Before bathing, everyone visits the temple of Godavari." Vivek Anand points to a gaily coloured structure on the bank of the river. The evening sun shines on the statue of a goddess carved out of polished black stone and wrapped in colourful silk. She carries a lotus flower, the ampulla of wealth, a sceptre and the mirror of wisdom in each of her four hands. The goddess is decorated with garlands and gold chains and stands on a fearsome crocodile. The altar is covered with flowers—offerings made by the pilgrims. Overcome by the religious devotion that surrounds me, I fold my hands in veneration.

The pilgrimage would not be complete without a visit to the source of the mighty Godavari. The place is called Trimbakeshwar and lies only 30 km away from Panchavati. This was where the Holy Gautama practised asceticism during a terrible drought to invoke Shiva, the creator of the world, to bring water to his parched land. Finally, after twelve years, Shiva relented and sent the goddess Ganga to the Earth. The place where Shiva twined his long hair around the rocks is believed to be the origin of the Godavari. For Indians, this river is holy and it is also known as the "Ganges of the South."

Pic 7: *After sunset, the priest conducts a fire-ritual ("aarti") for the river goddess Godavari. Pilgrims chant hymns to the glory of the river.*

The Hindu universe

Hinduism is more than a religion—it determines the world view, the social order and the day-to-day life of close to a billion people in the whole of South Asia. Hindus refer to the classical Vedic scriptures that were compiled by priests belonging to Indo-Aryan nomadic tribes that migrated over 3000 years ago from Central Asia. While the conquerors settled down in the fertile plains of the Indus and the Ganges, elements from the native cults of the vanquished Adivasis merged into their religion. Later, migrants from Southeast and Central Asia, from Persia and Arabia, imported their religious customs to India—Hinduism assimilated many of these without changing its essential character. Generations of ascetics and gurus have lent new interpretations to the old scriptures, with the result that Hinduism today has an immeasurable diversity of cults, and to some extent, contradictory doctrines: meditation and magic, sensual pleasure and renouncement, animal sacrifice and vegetarianism. Two essential features set this cultural synthesis apart from European philosophy: the idea of rebirth and the caste system.

According to the Hindu law of karma, all deeds of a human being—good or bad—ultimately reflect on him personally. He who observes the customs and respects the Gods can hope to be reborn in a higher caste. Each living creature has a soul which has the potential to develop into a higher life-form. It does so by means of various stages of existence that parallel nature: nature changes in recurring seasons, yet progresses at the same time. In countless circles, the faithful strive to refine the soul, which ultimately becomes one with the divine and dissolves in Nirvana. The soul of a cow would probably be reborn in a human body at some point of time and thus a cow is considered as important as a human. Each stone disintegrates into earth, which in turn nurtures a plant, which then provides food for an animal and so on. The Hindus have been aware of relationships and dependencies in nature for thousands of years (*see box*). The West has had to discover them afresh in the form of ecology.

Coupled inextricably with Hinduism and propagated by the same authorities—the Brahmins—the caste system has anchored itself deeply in the Indian psyche. Even Christians, Mus-

lims and Sikhs, who are explicitly against the caste system, follow the rules of this hierarchy within their own societies. The caste system has been in existence for at least 2000 years—by far the most stable system of domination that mankind has ever produced.

From a Western point of view, a social order that excludes nearly twenty percent of the population as "untouchables" and condemns them to inhuman living conditions is simply unconscionable. Like almost all reformers of the last hundred years, a majority of Indians too want to put an end to untouchability. However, for the most part, the caste system per se is still considered to be meaningful by many. The caste provides its members the security of a large community, which is helpful while searching for jobs, while concluding contracts and even while representing political claims to power. Belonging to a caste gives each individual a fixed place in society, determines diet, education and professional career. Since marriages take place only within one's own group, an intermixing of the various ethnic groups on the subcontinent has also been prevented. The remarkable stability (many would rather say, the ponderous rigidity) of Indian society is rooted in the caste system.

The "small" traditions

Unlike most other religions, Hinduism does not have any rigid clerical hierarchy. The faithful are free to choose their own guru, which is the Hindu word for teacher. There is no universally binding religious doctrine. It was therefore possible to interpret and shape the Indian ethos differently in various strata of society and in the various regions of the subcontinent. For instance, the major Hindu festival Dusserah is known as Durga-Puja in Bengal. Whereas the mythological hero Rama is feted as the vanquisher of evil in the rest of India, the Bengalis worship the Goddess Durga, who likewise has the power to destroy demons.

For most Westerners, the mention of India calls to mind highly-advanced civilisations, the religion of the Brahmins, the epics *Ramayana* and *Mahabharata*, Raga-music and classical dance. But even the lower castes have their traditions and legends. Even today, their musicians and poets perpetuate the memory of lo-

cal deities and heroic ancestors. They celebrate their special identity with their own holidays and customs.

The cult of a local deity often established a new regional identity, which progressed into an independent culture, enlarged by a special language, dress and economic system. After the fall of the Maurya and the Gupta empires, these regional cultures gave rise to new states and dynasties in the early mediaeval ages: for instance, the Ganga empire in East India, the Chalukya and Chola dynasties in South India, and many more. The borders of the Union States, which were formed along linguistic lines in 1955, correspond more or less to the reach of old regional empires. Till date, Bengalis, Marathas, Tamilians and other ethnic groups refer to the legends and cultural achievements of erstwhile regional empires. There have been movements in the states of Punjab, Kashmir, Assam and Nagaland demanding autonomy from the Central Government which is perceived as being dictatorial.

Gradually, even science is recognising the significance of the regional cultures, of the so-called "small" traditions. The German Indologist Hermann Kulke makes an astonishing assessment: "Standing between the local traditions and the all-Indian Brahmanical tradition, they increasingly became the true carriers of India's cultural development. Thus nearly all major masterpieces in literature, architecture, painting, and even new religious movements, from the beginning of the second millennium, arose first and foremost from individual regional traditions."

In the course of time, the various cultures have been enriching themselves mutually. This process of exchange hasn't ended yet; India's cultural wine continues to ferment. As the past has dominated, it is precisely because of its vast diversity that Indian culture is in a position to integrate foreign influences that are considered positive. This capacity is, however, being put to a severe test in an era of jumbo-jets and satellite-T.V.

Living in Sync with Nature

The holistic world-view of Hinduism dominates the Indian cultural ethos—in the myths and rituals, in arts and crafts. It communicates the realisation that human existence is determined by its surroundings and is also dependent on it. "In Indian cos-

mogony...., the world is created and renewed in a dialectical play of rise and fall, fusion and disintegration," writes Vandana Shiva. "The stress between these opposites is perceived as the first manifestation of dynamic energy (shakti). From this crucial pristine energy emerges impulse and movement, indeed all existence. It is the essence of all things and permeates everything. The manifestation of this force and energy is called Prakriti—nature."

Indian philosophy, as also agriculture, medicine and metallurgy are based on the doctrine of the five forms of matter (in Hindi: *panch maha bhut siddhant*). Space, ether, fire, water and earth are personified in deities, who can be appeased through

Pic 8: *Hindus often plant the holy Tulsi-herb (ocinum sanctum) in front of their houses. Every morning and evening, women worship the Goddess of prosperity and good fortune, Lakshmi, who is said to reside in the plant.*

ECOLOGY AND TRADITION

Ahimsa: *Nowhere in the world is vegetarianism as widespread as in India. The teachings of the Hindus, the Jains and the Buddhists preach Ahimsa, absolute pacifism, while dealing with all living creatures. Orthodox Jain monks tie a cloth around their mouths to avoid swallowing insects inadvertently. The doctrine of Ahimsa inspired Mahatma Gandhi to follow a path of non-violent resistance.*

Divine mountains: *Indian temples symbolise divine mountains. All religious communities regard mountain peaks to be abodes of gods. The Jain community built 863 temples on a mountain in Palitana, Gujarat. Till recently, mountaineers were not allowed to trespass on the divine abode in the Kanchenjunga, the third highest peak in the world.*

Holy rivers: *Myths and legends tell of a divine origin of all large rivers. They are worshipped as life-givers in the form of feminine deities. A bath in their holy water is said to wash away the sins of the devout. It is for this reason that after cremation, the ashes are scattered in a river. Sources, deltas and confluences are considered to be especially holy and are visited by thousands of pilgrims.*

Animal worship: *It is not only cows that are sacred in India. The Warli tribals, who hunt in the forests north of Mumbai, worship the tiger god, Vaghoba, for protection. In the Karnimata temple in Rajasthan, pilgrims feed thousands of rats that are said to be reincarnations of deceased ancestors. In South and East-India, women worship deadly cobras without fear, offer them milk and ask them for protection.*

Plant worship: *For centuries, many plants have been protected because they are venerated as manifestations of gods. The Pipal tree (ficus religiosa) represents the almighty trinity: Brahma in the roots, Vishnu in the trunk and Shiva in leaves and branches. Each constituent provides ingredients for traditional medicines. Hindus equate the cutting of a Pipal tree with the death of a Brahmin.*

Bishnoi: *The wise Guru Jambaji, who initiated the Hindu sect of the Bishnois in the 15th century, asked his disciples not to wilfully cause harm to either plants or animals. Till today, Bishnoi villages stand out as flourishing oases in the desert of Rajasthan.*

Sanctuaries: *Since time immemorial, Indian rulers have protected a part of the forests in the peripheral areas of their kingdoms. These primeval forests often served as hunting grounds and also ensured the supply of war elephants, which could not be bred in captivity.*

Holy groves: *The Santal tribals in Bengal worship their gods under a Sal tree (shorea robusta). This tree stands in the centre of a small grove that has remained untouched by human influences for centuries. The dense primeval forest stands as a living monument to the energy of the Earth Mother who is worshipped there. The villagers believe that the Earth Mother protects them against misfortune and diseases. Not only in Bengal, but also in Central India and in the hills of the Western Ghats near Mumbai, small primeval forests have been preserved in the middle of barren landscapes.*

sacrifices in temples or through meditation and asceticism: the life-giving river goddesses Ganga, Godavari and others, the god of fire Agni, source of all energy; Vayu, the god of ether who gives humans the breath of life and delivers them; and finally the king of Gods Indra, who rules heaven and brings rain. Indian myths also convey ecological wisdom, as the Indian art historian Kapila Vatsyayan says: "Non-pollution, discipline, restraint, awareness of interdependence and interrelatedness is taught to us through custom, daily routine, myth and ritual, but we don't learn. We should learn before it is too late."

The caste system contributed a sense of limits in the utilisation of natural resources. "Each caste had its traditional way of life," writes the ecologist Madhav Gadgil. "This holds true above all even for the lower, mainly rural, castes. They are the ones who depend the most on natural resources and use them in a special and often limited manner according to a specific distribution system. Thus, in one region for instance, one caste catches fresh-water fish, the other breeds sheep, a third breeds ducks, a fourth extracts salt from the sea, a fifth maintains coconut groves etc." Gadgil provides examples to show that tribes and castes earlier limited themselves to an exactly defined settlement area. According to Gadgil, each group knew "that the resources of the area they had inherited had nourished them for generations" and that these areas had to be "preserved for their descendants." Temporary fasting rituals ensured that there was no hunting or fishing during the reproduction season. Many forests, ponds and sections of rivers were managed by the village community, which monitored the extent of their utilisation.

There was no shortage of land in ancient India. Forests covered more than one third of the total area. Agriculture functioned according to bio-organic principles. Artisans used only natural materials and also recycled the remnants. Firewood, cowdung, sun, water-power and livestock were used as energy sources. In effect, the economic pattern prevalent in those times was both socially and ecologically sustainable.

With the advent of colonialism the exploitation of Nature began, a development that also contributed to the impoverishment of the rural population. Today, India is on the brink of an ecological catastrophe. The holy rivers are contaminated with

untreated household sewage and industrial toxins. Air pollution has reached dangerous levels in large cities. Only ten percent of the land area is covered with healthy forests. Monsoon rains wash away the unprotected topsoil and cause floods of unprecedented severity. At the same time an increasing number of districts are being declared as drought-prone areas.

Almost half the population lives in permanent poverty and these 400 million people are critically dependent on free natural resources—on clean rivers and lakes for drinking water, on fertile lands and sufficient rain for a good harvest, on forests for firewood, fodder and herbal medicines. But their poverty often denies them adequate space to use these natural resources in a sustainable manner. How can India break out of this vicious circle of poverty and over-exploitation?

Thanks to the untiring efforts of conservationists and journalists, conservation of nature is now a public priority. Although environmental laws should protect forests, keep water and air clean, the government is not in a position to implement these provisions across the breadth of the country. Lack of funds, rampant corruption, and not least, the influence of powerful economic interests stand in its way. However, it is a tribute to the democratic spirit in the country that citizens themselves have become active at various places and are employing non-violent forms of protest to fight for the preservation of the country's rich natural resources. Taken together, the numerous citizens' action committees, development organisations, dedicated scientists, politicians, jurists and journalists constitute the world's largest environmental protection movement.

Traditions struggle for survival

As soon as the train pulls into the station, the voices of tea-vendors become louder: "*chai, chai, chai garam*!" Until just a few years ago, they used to serve this sweet beverage in small earthen cups which were simply thrown out of the window after use. Breaking into small pieces, they gradually crumbled away and returned to the earth. Today, however, in the Indian Railways, it is modernity that sets the tone; today tea is served in plastic or styrene cups. Since old habits die hard, it is quite natural that these cups too fly out of the window. This plastic scrap

might well have defaced the landscape along busy rail routes had it not been for poor villagers who collect it and sell it to recycling plants. The label "Please destroy after use" printed on the plastic cups confuses me. "That's for hygienic reasons," explains the person sitting next to me. "Rag-pickers obviously get more money for cups that are still usable, which in turn would be re-used by the tea-vendors and we would never be sure of drinking out of clean cups!"

I don't understand the world any more. At one time there was this disposable cup, perfectly harmless ecologically, which provided employment and bread to thousands of potters involved in its production all over the country. Now, a clever industrialist has seized the business and we are expected to pollute the landscape for "hygienic reasons", and snatch away the daily bread from the poor? Is this really the progress which everyone here talks about?

Since the colonial era, we Europeans have attempted to demonstrate the superiority of our technology to Indians. So-called experts of the World Bank and other developmental agencies advise the government in New Delhi to introduce highly advanced—in other words Western—technology. Recently, international companies have begun beaming advertisements via satellite-T.V. from Hong Kong into remote villages in praise of their entertainment electronics, washing machines, perfumes, whisky and cigarettes. Villagers, who have been able to preserve their traditional way of life till today, are now being bombarded with the latest products from the world of Hi-Tech, as if learning about the latest washing machine with a bio-saving programme help a farmer's wife who is still forced to draw water from a well.

The language spoken among those members of the upper echelons of Indian society is frequently English and not Hindi, or any other native tongue. Many yearn for a job in the Golden West. Everything Indian is considered outdated and dismissed as backward. In large cities, the first few supermarkets have already opened and fitness-studios and discotheques are mushrooming all over the place. "I get what I want!" says a gigantic hoarding featuring an Indian yuppie.

Modernisation is destroying old lifestyles. Competition by modern agricultural units is forcing small farmers out of the mar-

MAHATMA GANDHI: FAITH IN INDIAN CIVILISATION

(Excerpts from his speech at Indore, March 30, 1918)

"We think that we shall be able to progress through the great discoveries that have been made in the continent of Europe. But this is an illusion. We are inhabitants of a country which has so long survived with its own civilisation. Many a civilisation of Europe is destroyed, but India, our country, survives as a witness to its own civilisation. All scholars agree in testifying that the civilization of India is the same today as it was thousands of years ago. But, now, there is a reason to suspect that we no longer have faith in our civilization. Every morning we do our worship and prayer, recite the verses composed by our forebears but we do not understand their significance. Our faith is turning in another direction."

Source: Raghavan Iyer: *The Essential Writings of Mahatma Gandhi*, Oxford University Press, New Delhi 1993.

ket and off their land. Traditional healers can no longer find herbs because their forests have disappeared. Basket-weavers are impoverished because bamboo is becoming rarer and dearer. For many weavers, work is no longer rewarding because the export promotion policy has made yarn scarce and expensive. In 1991, sixty weavers starved to death in the state of Andhra Pradesh.

Gradually, human values in India have also undergone a change. The individual is liberating himself from the confines of family and caste. Money and consumption are the new deities. One sees mostly the people of the older generation in temples—the pilgrimage of the younger generation is to large cities in search of a new and better life. In the city, caste loses its significance, security and solidarity are replaced by competition. All of a sudden, old values can no longer solve acute problems—outdated perhaps?

Fundamentalist Hindu organisations offer a way out of this bewilderment; they swear by the golden age of Hindu Emperors and are making attempts to turn back the clock of history. Slogans like: "I'm proud to be a Hindu" are supposed to establish an identity and convey a new feeling of security. In the preceding years, the BJP (Bharatiya Janata Party) and other right-wing Hindu parties have managed to achieve noticeable electoral successes. This may prove to be a threat to Indian culture

as well. Swami Agnivesh, civil rights activist and office-bearer of the Hindu reform movement, the Arya Samaj, nurtures the non-dogmatic diversity in his religious community. He says: "These fundamentalists are taking the preservation of tradition a bit too far. They want to create a dogmatic and monolithic religion, they want to institutionalise a hierarchy. They will ultimately destroy the essence of Hinduism!"

Popular movements in the country tread a third path between the world market and fundamentalism. They perpetuate traditional values aimed at inspiring village communities towards solidarity. They cite customary laws to encourage the participation of the underprivileged rural population in the management of natural resources. Citizens' groups are also seeking to revive proven technologies that are well adapted to the country's social structure and environment. This gives rise to an ecologically sustainable system of management, to a way of living that recognises the finiteness of all terrestrial resources, to progress that is oriented to basic human needs rather than sales graphs of large companies. "The earth provides enough to satisfy everyone's needs", said Mahatma Gandhi, "but not for everyone's greed."

5

Our Land, Our Life

Cubbon Park in Bangalore had rarely seen so many visitors; half a million farmers assembled there on October 2nd, 1993, Mahatma Gandhi's birthday, for the world's largest rally against the world trade agreement GATT, which was on the verge of finalisation. They waved green scarves and twigs of the neem tree, gave vent to their anger over the imminent patenting of seeds and on the entry of multinational companies into Indian agriculture. Representatives of farmers' associations from the whole of India, from Ethiopia and Zimbabwe, from Brazil and Nicaragua, from Sri Lanka, Malaysia, Thailand, Indonesia, Korea and the Philippines swore to uphold the international solidarity of farmers in the poorer two-thirds of the world. In a symbolic gesture, they exchanged clay jars filled with seeds and agreed to establish an international centre for the promotion of seed research in the Third World. At the end, they raised their hands in oath. "We will protect our seeds with all our means!"

Empowerment and the farmer

India is one of the world's most important agrarian economies. No other country produces as much sugarcane, as many groundnuts, as much tea as India. Around seventy percent of the population earns its living from agriculture which accounts for forty percent of the GNP. The country's important exports—tea, textiles, leather—are made from agricultural products.

The poverty encountered in rural areas has its origins in the inequitable distribution of land and property. Prosperous farmers manage only 13 percent of agricultural units but control 57 percent of farmland. As opposed to that, small farmers, hav-

ing a landholding of less than a hectare, account for 55 percent of all farmers. Almost half the villagers in any given location do not own any land at all and are hence forced to work as seasonal and migratory labour in the fields of large farmers. According to aid agencies, five million farm hands toiled for years without regular payment because they were indebted to property owners and money-lenders and were enslaved by them in the form of bonded labour.

In the fifties and the sixties, the government attempted a more equitable distribution of land. However, most large farmers were able to circumvent the land ceiling acts—laws to limit an individual's agricultural holdings—by simply transferring the title deeds to front men and relatives. Throughout the country, only 0.5 million hectares of land, primarily of inferior quality, were distributed to the landless in the sixties—a drop in the ocean considering the fact that the number of authorised recipients exceeded 100 million. Only in the state of West-Bengal, ruled by a leftist Peoples' Front, can land reforms be said to have been implemented successfully. In current agro-political debates, land reforms are hardly ever discussed any more.

"Agriculture is the only field in which India could stand on its own feet. But the multinationals will swindle many gullible farmers," complains M.D. Nanjundaswamy, president of the Karnataka Rajya Raitha Sangha, who had organised the rally in Bangalore. Nanjundaswamy used to teach law at the university. Today he manages a farm and was till recently a member of the Karnataka State Assembly in Bangalore. His campaigns against the international agrarian cartel have made him the most popular farmer leader in southern India. He fears that the genes of Indian cultivated plants, which were the result of generations of breeding by farmers, may be declared the private property of multinational companies, which are even today getting the better of farmers in the form of grain merchants, pesticide manufacturers and fertiliser sellers: "Plant breeding is the inalienable right of the farmers. We will not allow agricultural research in India to be privatised and commercialised."

The anger of farmers in Karnataka is directed primarily against the US-multinational Cargill—the world's largest grain merchant—which is on the brink of becoming an influential seed merchant in India. On December 29, 1992, 500 members of the

Raitha Sangha stormed the American company's head office in India, ransacked it and burnt mountains of files. On July 12, 1993, 200 farmers destroyed the new building of a Cargill seed nursery in the village of Siravara. In March 1993, 200,000 farmers from all over India assembled in the capital for a rally against GATT and the patenting of seeds. The main speaker in Delhi was the head of the north Indian Farmers' Union—"Bhartiya Kisan Union"—M.S. Tikait: "We are here to stop GATT. If the government doesn't listen to us, there'll be a fearsome revolt!"

That this threat did not materialise is to be attributed, among other things, to the fact that Sharad Joshi, the head of the Maharashtra Farmers' Union (Shetkari Sanghatana) did not extend his co-operation. According to Joshi: "Till now, the export of agrarian products was either prohibited, restricted or channelised. As a result product prices were kept artificially low. The Indian farmers are hit by negative subsidies and price dumping by the government. The government does not solve any problems—it is the problem."

A countrywide farmer's movement could not develop because of the size of the country and the conflicting interests within the farmer community. Tikait and Joshi are typical representatives of wealthy landowners, in other words the rural exploiting class, who profit from the modernisation of agriculture and strive for higher profits and social influence. Only a few landless people are represented in their organisations. However, in the past it was the poorest of the poor who revolted in desperation and wrested concessions from the government. Even during the colonial era—1875 in Maharashtra, 1890 in Punjab—small farmers and landless peasants revolted against the landlords, destroyed their houses and even killed a few of them. From 1946 to 1956 Telangana, in northern Andhra Pradesh, was the centre of communist-led revolts against the feudal system. In 1967, North Bengalis rose against their exploiters. The so-called "Naxalite" revolt soon spread to the states of Bihar and Andhra Pradesh and was quelled by paramilitary forces only after much bloodshed. Even today, Maoist and Marxist-Leninist Naxalite groups are active in Bihar and Andhra Pradesh. In an armed struggle against the state and police, many have, however, lost sight of the original goal: an equitable distribution of land and property, the end of feudalistic exploitation.

Integrated, sustainable farming in ancient India

A hundred years ago, the colonial government entrusted the British agriculturist, J.A. Voelcker, with the task of observing Indian farmers at work and suggesting improvements. They were probably disappointed with the result of the study, because Voelcker wrote in his "Report on the Improvement of Indian Agriculture," published in 1893: "Nowhere else can one find better examples for the conscientious preservation of lands against weeds, for ingenuity in irrigation, for the knowledge of soil and its properties, as well as for the exact determination of the time for sowing and harvesting other than in India. And this is true not only for outstanding exceptions, but for the average person at large. It is marvellous how many people there also know about crop rotation, multiple cropping and fallow."

In pre-colonial India, agriculture, or rather land management, had already reached a high standard. Many farmers were getting better yields than their contemporaries in Europe. One might attribute this to the warmer climate and fertile soil, but

Pic 9: *Lunch on the field. Though the government is trying to spread the Green Revolution across the entire country with credit programmes and training courses, most small farmers still follow traditional methods of farming.*

Charter of Farmers' Rights

Immediately after the anti-GATT-demonstrations of March 1993 delegates of various farmers' associations as well as socially and ecologically inspired citizens' groups deliberated in Delhi about "biodiversity, farmers' rights and intellectual property rights". At the seminar they worked out a charter of farmers' rights which is reproduced here in condensed form:

1) The right to land: *Farmers have a fundamental right to land. Prime farm land should be protected for social and environmental reasons and ought not to be acquired for non-agricultural purposes. No agricultural land should be acquired without the farmer's consent and no agricultural land should be made available to multinational corporations.*

2) The right to conserve, reproduce, and modify seed and plant material: *Article 19 of the Indian Constitution gives every citizen the freedom to practise his/her occupation. This freedom entails the right to shape one's means of production since the seed is the primary tool of agricultural production—the "occupation" of farmers. The Article ensures the right of farmers to produce, reproduce, modify and sell seed.*

3) The right to feed the country: *Farmers have a right to ensure the food security of the country. Structural adjustment is undermining the very basis of food security in India, a process that will be further aggravated by the GATT's proposed policies.*

4) The right to just agricultural prices and public support for sustainable agriculture: *The farmers of India are not debtors and owe nothing to any of the financial institutions. There is a need for scientifically calculated parity prices for agriculture according to the price index, taking 1967 as the base year. Farmers also need public support to make a transition to sustainable agriculture.*

5) The right to information: *Farmers have a right to be informed, at every stage, of any developments that will affect the agricultural sector, whether the government feels that the impact will be adverse or not.*

6) The right to participatory research: *Farmers have been the original agricultural innovators and have a right to continue with this age-old tradition. Farmers have a basic right to innovate, create and participate in all research pertaining to agriculture. Democratisation of research is necessary for the implementation of this right.*

7) The right to natural resources: *Farmers have a right to local natural resources. These have to be managed on the principle of local sovereignty, by which the natural resources of the village belong to the village.*

8) The right to safety and health: *Farmers and consumers have a right to health and environmental safety standards.*

Source: Third World Resurgence, No.39, Penang Nov.1993

the high degree of integration in the management of forest, water and soil also played an important role. The Indian scientist Winin Pereira summarises the main features of this system which has been developed by generations of simple farmers: "Traditional farming went beyond the limits of farms, it also covered the other units of the village, the pastures and the forests...There was no 'garbage', almost everything that was grown could be used on the farm or elsewhere and then be composted into fertiliser. The integration of livestock, often even of trees, was of great significance for sustainability. All raw materials for this system were obtained from the fields and from the pastures and were, at least earlier, available free of charge: such as solar energy, air, land, water and genetic resources."

Most of the cultivated plants—millet, pulses, cotton, etc.—survived with water from the monsoon rains which normally last for three months. For rice and vegetables, the farmers developed diverse irrigation systems that were adapted to local conditions: small dams with a network of canals, bore-wells, cisterns. The fertility of the soil was preserved by scattering compost and dung, by burning leaves from the forest, by leaving the land fallow or by planting nitrogenous legumes. Nomadic shepherds let their cattle graze in the fields after the harvest and received grain from the farmers in exchange for the dung. Domestic animals produced fertilisers (dung), plant pesticides (urine) and energy; oxen pulled tillage implements and wooden carts, drilled bore-wells and Persian wheels. Pests were unable to multiply excessively due to the balanced cultivation of various plants on the same field. Insecticides were extracted from the seeds of the Neem tree and from other plants (*see box*). The farmers also allowed solitary trees to stand in fields and these trees provided a habitat to birds, reptiles and large insects. Wild animals aided fertilisation and pest control. Indian farmers knew how to exploit natural cycles. Their farming was oriented to subsistence, to the preservation of their family and their environment. The economy of the village remained stable for centuries, based on a highly developed system of land management that was truly sustainable.

British colonial policy brought about the end of integrated land management. The Europeans forced farmers to cultivate industrial raw material such as cotton and also introduced mo-

nocultures, which they considered more efficient. Many small farmers were forced to sell their lands because of the exorbitant land and water taxes imposed upon them. The ban on collection in nationalised forests alienated villagers even further from essential raw materials. As a result, there arose a rural proletariat that could be used for the cultivation of new plantations and for the construction of railway tracks.

This notwithstanding, traditional agriculture has survived till today in remote areas of the country. Winin Pereira observed that the Warlis, a tribe in the Western Ghats north of Mumbai, still practice traditional methods of farming. They protect themselves against the vagaries of the monsoon by amazingly simple strategies: "The Warlis normally plant various varieties of rice. They can choose between fifteen traditional varieties that have different requirements as regards water and soil and whose ripening time and resistance against pests also varies. If there are abundant monsoon rains, then the main varieties give good yields; if not, then the varieties that are more resistant but not as high yielding give a harvest that ensures survival."

Pic 10: *Indian farmers possess a profound knowledge, accumulated over generations, of the complex correlations in nature: plant breeding, soil and meteorological sciences, veterinary medicine.*

NEEM—A PESTICIDE THAT GROWS ON TREES

Sometimes one can read even in German newspapers about an inconspicuous tree from India, which is endowed with remarkable properties. For centuries, in its homeland, it has been planted in temples and gardens because it is said to banish evil. This is the Neem (azadirachta indica), a drought-resistant evergreen tree that grows up to a height of twenty metres and has spread from India across the tropical belt of the earth. In the opinion of many scientists, the neem tree will achieve world-wide significance as an eco-friendly means of pest control.

Indian housewives scatter leaves of the neem tree in grain stocks and linen chests, and thereby keep pests away. Twigs of the neem tree are sold in Indian markets—their tips are chewed and used as tooth-brushes. Indian naturopaths prescribe the bitter oil of the neem fruit for upset stomachs, piles, rheumatism, skin diseases, inflamed wounds, and even for leprosy. Many farmers plant this tree on the edges of their fields to keep pests under control.

Indian scientists were already aware of the varied properties of the neem tree at the beginning of this century. But it was only in the 60s that the Indian government started supporting long-term research programmes and that too only after people in the West began evincing a keen interest in this "wonder tree". National institutes in New Delhi, Pune and Coimbatore are currently trying to develop cost-effective biopesticides based on neem-oil but their capacities are simply no match for those of multinational companies.

In Germany, the government-owned development agency GTZ (German Society for Technical Co-operation) has printed an illustrated brochure that is distributed around the globe in agricultural development programmes. It demonstrates how farmers can produce a simple neem spray on their own: dry the olive-green seeds of the neem tree in the sun, crush them and dissolve one kilogram of the powder in twenty litres of water! "This neem extract is completely harmless to humans and warm-blooded creatures," claims Prof. Heinrich Schmutterer, who is a Botanist at the University of Gießen and also prepared the scientific basis for the GTZ-project. "Neem preparations are particularly suitable for fruit and vegetable cultivations. Compared to standard chemical preparations, they often do well. However, as opposed to the chemical industry, our target is not 100% efficiency—after all, useful animals also need to have something to eat!"

The German chemical giants Bayer and Hoechst are presently developing biopesticides based on neem extracts. The American company W.R.

(continued next page)

Grace has obtained a patent for the production of a neem preparation, which is marketed under the brand name Margosan-O. However, the current supply of seeds is not sufficient for mass-production of neem pesticide. The Indian government has already prohibited the export of neem seeds. Even then, Indian farmers fear the loss of another natural resource if multinationals begin marketing the "wonder tree".

Source, among others: Author's interview with Prof. H. Schmutterer, Gießen, 10.10.1990.

Green Revolution in trouble

So far, India's reputation as a starving giant in Asia refuses to go away. The restructuring and exploitation of Indian agriculture during the colonial era actually led to famines of unprecedented severity and resulted in the loss of millions of lives. Even today, many people in India can't eat their fill because they lack access to adequate means of subsistence. Moreover, the public distribution system for food is hopelessly inefficient. The first priority of Indian agricultural policy thus is, and will always be, to increase productivity so that food production keeps pace with population growth. To ensure the availability of food, the government fixes farm product prices and restricts exports of foodstuffs. However, these restrictions are to be gradually eased over the course of liberalisation.

In the early sixties, the World Bank and industrialised countries recommended the introduction of a newly-developed variety of high yield grain in India. Despite the misgivings of numerous politicians and experts in India, the government introduced the Green Revolution in the country. "The Green Revolution was described as a techno-political strategy that would generate surpluses and reduce the threat of communist uprisings and land conflicts in agriculture," writes Vandana Shiva. A study by the World Food Organisation (FAO) in 1983 found that in an "ideal situation", i.e., with plentiful irrigation and high additions of fertiliser and pesticides, Indian soils would be able to feed more than 2.6 billion people in the year 2000! According to current estimates, the Indian population at that time would, however, be "just" 1.1. billion.

For once, India became largely independent of grain im-

ports by cultivating the new "wonder grain", using artificial irrigation, mineral fertilisers and pesticides in the process. But today, thirty years later, it is clear that this form of industrially-supported agriculture is not sustainable in the long run. Vandana Shiva takes stock: "On the political level, it has been demonstrated that the Green Revolution gives rise to conflicts instead of reducing them. On a material level, the generation of higher yields of negotiable grains has created new weaknesses in the ecological system, which once again represents new reasons for conflicts."

Critics like Vandana Shiva assert that the Green Revolution has sharpened the disparity in income within the village community because only wealthy farmers can afford machines and chemicals. Many small farmers came to grief in the competitive wrangling and were ultimately forced to give up their land. Vandana Shiva also attributes the secessionist movement in Punjab—India's bread basket—to the centralisation of agrarian structures arising from the Green Revolution—a development that forced free farmers into becoming agents of the government and the agrarian industry.

In the thrust-areas of the Green Revolution—the north Indian plains and the huge river deltas in the South—a growing number of farmers realised that their cultivations required an increasing amount of fertiliser each year. A further increase in yields can be safely ruled out—the soil is increasingly sick. Years of canal irrigation rendered huge areas saline and marshy. The uninterrupted use of fertilisers and pesticides wiped out beneficial micro-organisms in the soil. In many places, it is no longer possible to control pests even with poison. The Green Revolution also contributes to the global greenhouse effect because, as opposed to natural farming, a great deal more energy in the form of mineral fertilisers, pumping of water and tractor oil has to be invested in such cultivation. At many places, the new grain varieties developed by central breeding stations have suppressed resistant native varieties, thereby threatening food security. Today, the government is forced to give subsidies worth billions of rupees for mineral fertilisers and for electricity to operate irrigation pumps in order to prevent famines and revolts by farmers.

Despite additional efforts, the production throughout India of rice and wheat—the pillars of the Green Revolution—has

been stagnant for the past few years. Gradually, a reassessment is taking place among Indian experts and international organisations. The father of the Green Revolution in India, the agricultural scientist Dr. M.S. Swaminathan, today recommends combining modern technology with traditional methods of cultivation. "The new paradigm of agricultural research and development will consist of three main components: ecological sustainability, equity combined with economic efficiency and reconciliation, as also a joint effort by the government and NGOs to improve the productivity and profitability of the most important systems of cultivation."

Back to nature

In the night of December 3, 1984, a tank in the plant of the American company Union Carbide in Bhopal exploded and released forty tonnes of deadly methyl–isocyanate into the air. The following day, 3000 people and countless animals suffocated to death. Even today, people continue to suffer the delayed effects of the world's worst chemical disaster. The factory of doom in Bhopal used to manufacture pesticides. German companies too operate their poison factories in India. Even chemicals such as DDT, which have been banned in industrialised countries due to their hazardous effects, continue to be used in India.

Indian foodstuffs have a higher concentration of chemical residues than those produced in Europe. No doubt a country-wide control system is lacking, but even the few analyses carried out intermittently have brought frightening results to light. An analysis, conducted in early 1994, of milk sold in New Delhi demonstrated a DDT-content of 0.5 ppm (parts per million), which is ten times higher than the limit specified by the WHO. In January 1994, the German Tea Association rejected a shipment of Darjeeling tea from India because the level of pesticide residues in it was unacceptably high.

That notwithstanding, it is a sign of growing environmental awareness, for which the Bhopal gas tragedy was an important catalyst, that an increasing number of farmers are changing over to natural farming. As yet only a few wealthy outsiders maintain contacts with the urban milieu, but the greater the number of examples to show that natural farming methods in India

are more profitable, the more widespread this movement will become.

Bhaskar Save, a 72-year old teacher, is regarded as a pioneer of natural farming in India. In 1951 he bought a piece of land in the south of Gujarat and switched over to natural farming seven years later. Initially, the yields declined, but he soon overtook his neighbours. Save lets nature run its course as far as possible: he doesn't believe in weeding and deep ploughing—only six percent of his approximately four hectares of land is irrigated. Legumes and earthworms enhance the soil's fertility, pests are controlled only with biological pesticides. "Each of my 400 palms bears 350 coconuts every year, I harvest 810 kg of rice from one hectare and I'm content with this," says Save. "One could extract more from the land but with a lot more work and expenditure on chemicals. But just imagine, I invest only seven rupees to generate a hundred!"

Seven years ago Vijayalakshmi and Gopalakrishnan, a married couple who are both teachers, acquired eight hectares of totally barren and hilly land in Kerala. They protected their property against grazing cattle, constructed wind-breakers and small embankments on the slopes and were thus able to arrest soil erosion during the rains. They sowed fruit-bearing and fast-growing trees, allowed nature to complete their work and supported her occasionally by adding compost and mulch. Today, a healthy forest covers the estate of the two eco-pioneers which is worth a fortune. Vijayalakshmi and Gopalakrishnan are often invited for seminars to share their experiences. They now devote their energies to the welfare of the tenant farmers and Adivasis living in their vicinity, and are trying to strengthen the economic basis of these groups.

Near Karjat in the Western Ghats, halfway between Mumbai and Pune, one has to cross a dusty hillside to reach the development project named Academy of Development Science, generally known as ADS. As a young scientist Darshan Shankar gave up his job as a statistician at the Bombay University and, together with a few friends, is now trying to combine tested natural methods into an eco-friendly system of land management. ADS guides small farmers in its vicinity, of which many are Adivasis, in the construction of small reservoirs, afforestation and in the acquisition of handicraft skills. Darshan Shankar says,

"We also try to learn from the farmers, perhaps we can combine their knowledge with scientific findings. Even in this area, which has been devastated by the destruction of forests and the Green Revolution, we still find an amazing genetic diversity."

On the ADS campus, great attention is paid to the preservation of biodiversity. A large garden has been laid out on a piece of land that is next to the forest. Locally-available herbs are cultivated there and are given to the residents because natural reserves have been depleted due to the destruction of forests. "We have collected 350 traditional varieties of rice here and are trying to breed high-yielding and, at the same time, resistant varieties by cross-breeding," says the project manager. Till he died recently, ADS was advised by Dr. Richharia, a renowned rice expert who was dismissed from government service because of his unconventional views.

The UN Conference on Environment and Development, which was held in 1992 in Rio de Janeiro, approved an agenda for action in the next century, known as "Agenda 21." In Chapter 14 of the agenda, the governments of the world commit themselves to the promotion of a sustainable form of agriculture.

In January 1994, the Indian Agriculture Minister announced, for the first time, support for organic farming and earmarked Rs. 260 million for this purpose. Already, tea and fruits that do not contain any chemical residues are being exported to Germany by the agricultural trading company Kurunji Organic Food India.

In the westernised upper-layer of Indian society, health consciousness is gaining ground. The few existing bio-farmers are hardly in a position to match the growing demand for "organically grown" food. India's cultured class currently reads books written by the Japanese Masanobu Fukuoka, who is regarded by some as the guru of natural farming, and those written by the Australian Bill Mollison, who has made a name for himself with permaculture. However, what these people tend to overlook is the fact that the supposedly "backwoods-farmers" in their own country, especially the Adivasis, who are despised by many, have been following the same principles for centuries. People like Winin Periera, who emphasise sustainability, are sceptical of many bio-farmers: "Tractors are not sustainable because they require non-renewable raw materials such as mineral oil and

metals, which are not available locally. Many Indian bio-farmers produce only for the market; very few of them try to revive the old systems in a small area. Even in Europe, many small farmers are trying their hand at integrated farming but they always encounter limits that are beyond their control: there are hardly any horses for ploughing, and no common land that could provide fertiliser and pesticides."

Biological agriculture is thus not necessarily sustainable. Rudolf Bunzel, who works in the German Evangelical Church as a consultant for developmental education in rural areas, makes a clear distinction: "The movement for a globally sustainable agriculture is slightly different from the movement of bio-farming. Both could complement each other, if only the proponents of bio-farming were to stop demanding immediate freedom from chemicals in agriculture all over the world. The concerns of poverty alleviation, of participation, preservation of biodiversity, reduction in emissions of greenhouse gases and the restructuring of agricultural institutions are, however, not automatically a component of bio–agriculture guidelines. So Rio looks beyond these guidelines!"

6

Water is Might

Katore is the epitome of an Indian village. Thatched mud houses are grouped around a central area where children play and buffaloes graze. Women are returning from the river with shining brass pitchers full of water. A farmer steers his bullock cart, heavily loaded with fodder, over the gravel road that connects Katore to the outside world.

The village head, Chaudia Banga, is a wizened old man whose alert eyes are conspicuous under a huge turban. After welcoming us with tea and tobacco, he leads us around the village. In the inner courtyards of the houses, women and girls are threshing corn. Three generations—around fifteen to twenty persons—live here, together with buffaloes and goats, hens and dogs under one roof. Chatter and work still go hand-in-hand here.

What sets Katore apart from most other Indian villages is its egalitarian community. No hovels, no caste-barriers, no large land holding. The inhabitants consider themselves to be a part of the Bhil tribes—descendants of the Adivasis of western India. They live mainly on crop farming but also supplement their food by fishing and hunting, and also by collecting herbs and roots in the forest. The Bhils worship the Earth Mother and the spirits of the forest which inhabit old trees and mountain peaks.

The land here belongs to those who till it. Electrical motors pump water from the Narmada river and help the farmers lead a life of modest affluence. Chaudia Banga says: "This land is blessed by God. Year after year we get three harvests—rice and millet, fruit and vegetables, cotton and groundnut. It is always enough to feed us. We sell the surplus in the city market."

A terrible catastrophe, as yet barely perceived, is threatening this idyll. In a few years, Katore and the entire area around it will be submerged under the waters of an artificial lake. Around 150 km downstream, the Sardar Sarovar Dam is being constructed in the neighbouring state of Gujarat. Chaudia Banga and his people have to find a new home, but will they be able to cope in an alien environment? Will they find enough to eat there? The village community will certainly be torn asunder. And their gods—can they be rehabilitated? Without their protection, life will be devoid of joy.

The Dam promoter's pompous promises for new homes in resettlement villages have proved to be an eye-wash, as Chaudia Banga points out: "Three years ago, we saw the piece of land which the government wanted to give us as compensation. It was sheer mockery—everything was saline, not even grass was growing there. No sensible farmer would accept an exchange there."

The Narmada dam project

The Narmada is the only major Indian river that flows towards the west. It originates in the east of Central India and drains into the Arabian sea after traversing 1300 km through the state of Madhya Pradesh. In doing so, it forms a natural boundary between the southern and northern parts of the subcontinent. The Narmada is described in Hindu legends as a beautiful, unapproachable virgin. The river is supposed to have originated from a teardrop of God Shiva. There are rows of temples along its banks. Mendicants make a pilgrimage from the source to the mouth, and back.

In its upper course, the river snakes through wild and thickly-forested hills. National Parks provide a sanctuary to tigers, wild buffalo and rare species of birds. The valley widens after a few hundred kilometres. The Narmada crosses the dry Deccan plateau, passing the pilgrimage cities of Hoshangabad, Omkareshwar and Maheshwar on its way. It provides water for the cotton fields of farmers and a livelihood for innumerable fisherfolk.

Around 300 km short of its mouth, the river breaks through the coastal mountains in Western India. There, just before the

border between the states of Madhya Pradesh and Gujarat, the air is filled with the noise of heavy construction machinery. Excavators and tracked vehicles eat into the steep cliffs overlooking the banks of the river. Laid out in a gentle curve, a massive concrete barrier braces itself against the current. It is expected to reach a length of 1.2 km by the year 2000 and at 163 m in height, it will be higher than the cathedral of Cologne.

The Sardar Sarovar Dam represents the first stage of a gigantic hydraulic engineering project in the Narmada Valley. The plan envisages the construction of thirty large dams, 135 medium and 3000 small dams over the next fifty years. The Narmada Project is expected to provide electricity for the construction of new industries and also supply service and drinking water to the drought-prone state of Gujarat. The idea for this project dates back to the fifties, when development projects were planned under the motto "bigger, higher, broader." The World Bank granted a credit of 450 million dollars for the first dam, even before construction commenced in 1987.

Pic 11: *Farmer-women demonstrating against the dam on the Narmada river. Women lead the way in environmental protection by virtue of being the guardians of tradition.*

NARMADA BACHAO ANDOLAN: INTERVIEW WITH MEDHA PATKAR

The "movement for saving the Narmada" was honoured with the "Alternative Nobel prize" by the Jakob von Uexkull Foundation in 1991. Medha Patkar travelled to Europe for the award ceremony. The author had an interview with her in Bonn on December 4, 1991. Excerpts:

Question: Why do you demand an immediate halt to construction activities at the Sardar Sarovar dam site and that the project should be revised?

Medha Patkar: *The project is economically unviable, socially unjust and ecologically detrimental. It will displace 3-400,000 people from their land and nobody knows exactly where land for the resettlement of so many people can be found. We demand a halt in construction because the environmental clearance has lapsed. So far just 10 percent of the planned expenditure has been spent. Wouldn't the unfinished dam be an impressive monument to a faulty development policy?*

Question: In your opinion, how can Gujarat be freed from the threat of drought?

Medha Patkar: *Gujarat had once been a lush green landscape. We shall try to reestablish the natural balance by vast afforestation efforts and many small waterworks. In this way the land can be freed from drought much faster and most probably also much more economically than by the Narmada project.*

Question: You are challenging the state of Gujarat, one of the richest in India. Do you really believe you can stop the dam?

Medha Patkar: *For seven years I have been running up and down, from one village meeting to the other. We are assisting illiterate Adivasis in complaining to the authorities, we are feeding information to the press, we challenge the government. Several times I have been thrown into prison. Right now, I think there are 15 court cases against me. Basically I am open to any kind of dialogue, but in the circumstances given the Adivasis have to insist on their rights even in the face of resistance. We will not go begging to the government. By the way, half of our activists are women. As long as people share the will to fight on to the finish, I believe we will win!*

The government plans to spend Rs. 65 billion, i.e., around DM 3.5 billion, for the Sardar Sarovar Dam alone. Two power plants with a capacity of 1450 MW are later expected to generate electricity that will be distributed among the three states of

Gujarat, Madhya Pradesh and Maharashtra, all of which are involved in this project. The water from the Narmada is to be taken via a 500 km long canal through the heart of Gujarat in order to increase agricultural yields there and supply drinking water to distressed villages. The Chairman of the National Dam Committee, Sanat Mehta, has this vision of a flourishing land: "The project will yield an additional income of Rs. 14 billion per annum. We have calculated this amount from the expected increases in production in agriculture and the energy sector. The sale of drinking water accounts for only a small portion thereof."

International protest movements

"What will the dam bring us?—Only destruction and harm!" chant a group of farmer-women. "None of us will allow ourselves to be driven away—the dam will not be made!" Leading thousands of protesters, the social reformer Baba Amte, well-known because of his work with lepers, and the civil rights activist Medha Patkar arrive in the small town of Niraspur on the Narmada river. The reception committee steps forward from the eager crowd. Hands fold in greeting and the mayor garlands Baba Amte. Flowers rain down on the marchers. Somewhere in the middle of the crowd I recognise the angular face of Chaudia Banga from Katore.

In the marketplace, a podium has been built out of bamboo. One can hear folk songs, sung by a group of Adivasis. Environmentalists from Mumbai and Delhi take the stage as speakers: "The Sardar Sarovar Dam is a symbol of corruption and senseless destruction," Baba Amte thunders into the microphone. "We are convinced that the construction of mega-dams is outdated. Nowhere in the world can one afford to continue building such concrete monsters against the will of the people!"

Over fifty citizens' action committees have come together to form the nation-wide Narmada Bachao Andolan (movement to save the Narmada), which has Adivasis and Hindu farmers, social workers and scientists, lawyers and journalists working side by side. They are all fighting for progress with a human face and are employing Mahatma Gandhi's non-violent forms of protest to attain their goals. Thousands have come together for rallies, a few hundred were destined to see the inside of a jail.

A woman guides the movement. A qualified sociologist, Medha Patkar, organised the first resistance group in 1986: "We are demanding the right of co-determination at all levels of planning, right from the village council up to the central government. The affected people must have a chance to inspect the planning documents and form a picture of the project's costs and benefits for themselves. Only then can a just compensation be ensured under the given conditions."

However, a plan is in the offing to make Gujarat the centre of the Indian chemical industry. Service water needed for new factories can only be provided by a large dam. Even large landowners are pushing for an early completion of the dam, since their land would give higher yields with artificial irrigation. Politicians of all parties praise the Sardar Sarovar Dam as Gujarat's new lifeline and are wooing people with the promise of providing drinking water to millions of villagers. According to them, the opponents of the project only want to sabotage progress in

Pic 12: *The leading lights of the "Narmada Bachao Andolan": Medha Patkar undertook sociological studies in the villages along the Narmada when she first came to know of the gigantic dam project almost ten years ago. Baba Amte, bed-ridden due to a back problem, handed over his internationally-renowned aid project for lepers in central India to his sons and shifted into a cottage on the endangered bank of the Narmada to stage a silent "dharna".*

Gujarat and are thus to be viewed as public enemies. As a result, the police use a heavy hand against the demonstrators. They have flattened houses with bulldozers, beaten up women and children with bamboo sticks and have mistreated them even in custody. During a peaceful demonstration in the village of Bhirad in Maharashtra on November 17, 1993, policemen shot a fifteen-year old Adivasi boy, Raimal Punya Vasave. In March 1994 young hooligans, incited by local politicians, attacked the office of the resistance movement in Baroda in Gujarat and told the civil rights' activists to leave town. Despite all provocations, Medha Patkar and Baba Amte cling firmly to the principle of non-violence.

In the meantime, the first few villages near the construction site have already been submerged in the backwaters of the dam. In 1993, the Adivasi village Manibeli witnessed the evacuation of 234 villages in the Narmada valley. Protesting villagers waited in their huts for the flood waters which accumulate behind the dam during the rainy season. They explained to the journalists present that they would rather die with their house and possessions than be driven away. A massive police action ended the matter—once again blows, screams, arrests, destruction. The government obviously requires the use of violence to push its version of progress through.

Around the world, citizens' action committees, environmentalists and development agencies have expressed their solidarity with the Indian Narmada Bachao Andolan. For the first time in its history, the World Bank has been forced to allow independent experts to evaluate one of its projects. The report of the four-member team headed by Bradford Morse, a former Director of the UNDP, was published in the summer of 1992. It confirmed and corroborated the criticism levelled by the project's opponents.

In Bonn, demonstrators formed a chain along the fence of the BMZE (Federal Ministry for Economic Co-operation and Development) in the summer of 1992 and demanded that the Federal Government reconsider its continued support for the dam. The government was forced to change its stance, after even the Lower House of the German Parliament decided to get involved in the matter. In November 1992, under pressure from USA, Germany and Japan, the Directorate of the World Bank laid down

new conditions pertaining to environmental protection and resettlement of the affected people, and made the disbursement of outstanding credit tranches conditional on the fulfillment of these new requirements.

Shortly before the prescribed deadline, at the end of March 1993, the Indian government declared that it would complete the dam on its own and would forego further funds from Washington. The government of Gujarat invited public tenders for the project and urged construction companies to expedite the process. Even so a majority of the villages in the Narmada valley have refused to co-operate with project officials. In the next monsoon, many villagers can once again expect flooding of their homes. But they continue to fight to preserve their way of life and their world.

The Narmada project is the focus of an environmental debate in India that often touches upon social issues. The irony of fate condemns the very people who have preserved a harmonious relationship with nature, the Adivasis, to be the victims of a callous and unquestioning belief in progress. The people of Katore were happy to hear from me that their protest had been heard abroad too. In the evening we sat around a camp fire, drank palm wine and listened to wondrous stories. Chaudia Banga admitted that he had taken me for a representative of the World Bank. I wished him from the depths of my heart that Katore be saved from the floods. The rhythm of the drums soon had us under its sway and we began to dance.

Traditional water management in India

With an average annual rainfall of 2000 mm, most regions of India receive double the amount that Central Europe does. However, this rainfall is limited to three months during which monsoon winds carry moist air from the Arabian sea over the subcontinent. As a result, people in South Asia have been facing the centuries-old task of collecting this water in order to survive the dry and extremely hot summer months. Management of water resources in India is therefore a matter of survival. Those who control water possess economic and political clout. For instance, the distribution of Ganga waters upstream of the Farakka-Barrage in Bengal has, for years, been weighing heavily on rela-

tions between Bangladesh and India. Similarly, the question of an equitable distribution of the water from the south Indian river Cauvery led to violence between the neighbouring states of Tamil Nadu and Karnataka and resulted in the loss of many lives.

The national development policy has been an important factor in the neglect and abandonment of many traditional water supply installations. Planners and politicians concentrate on prestigious mega-dams and neglect the construction of smaller, technically simple installations. Ever since inaccessible irrigation offices have gained control of water distribution and have become responsible for monitoring the maintenance of installations, village communities have lost interest in the upkeep of these structures. As a result, old dams are crumbling, canal networks are decaying and former village tanks are being transformed into building land.

Since 1947, the year of its independence, India has initiated 264 projects for the construction of large dams. Of these, two thirds are yet to be completed. In a majority of the projects, only half the targeted irrigation potential could be realised. For instance, the canals of the Tawa Dam, built twenty years ago on a tributary of the Narmada, are so porous that half the water seeps into the ground before reaching the fields. As a result, the ground water level rose dramatically and many fields became marshy. The consequence: agricultural yields did not rise—they declined instead. In 1970 the Machhu Dam in Gujarat collapsed, sweeping away the city of Morvi and consigning hundreds of people to a watery grave.

Since 1951, the construction of large dams in India has displaced 14 million people from their land. Compensation and assistance for resettlement has rarely matched the needs of the affected populace. The weaker members of society often go empty-handed when, for instance, funds are misappropriated by corrupt officials. For many, resettlement has implied a plunge into misery.

Gradually, however, a general change in thinking has become evident. In spring 1994, the Ministry of Water Resources in New Delhi announced that no more large dams would be planned or built. Although all projects that have commenced are to be completed, the emphasis in the future would be on the construction of small and medium-sized installations.

WATER SUPPLY FROM MEDIAEVAL TIMES

The classical Vedic scriptures, written around 800 BC, contain directions for the ceremonial inauguration of irrigation canals. Even today, one comes across traces of ancient irrigation techniques in all regions of India. The cities of the Indus civilisation were traversed by an ingenious canal network for fresh water supply and sewage disposal. In Bengal, a fine-meshed canal system, which overflowed at high tide and filled the fields with nourishing river water, was modelled 2000 years ago along Egyptian lines.

In the desert, underground cisterns were built and were filled with rain water using canals. In the Himalayas, mountain streams were tapped and the water flowed through bamboo pipelines into the villages. The Deccan plateau, which covers the largest area of the south Indian peninsula, is full of innumerable storage tanks that were constructed by village communities over centuries. Many of these constructions still fulfil their purpose.

Traditional systems of water supply still serve thirty to forty percent of irrigated farmland in India. Instead of destroying life, they enrich the ecological diversity. Small dams and canal systems can be constructed and maintained by village communities using locally available materials, and thus require neither World Bank credit nor expensive foreign technology. A few examples:

Great Anicut: *In the second century AD, King Karikala Chola initiated the construction of the first dam across a large river in present-day Tamil Nadu. The Great Anicut is 329 m long, up to 5.5 m high and made from massive blocks of stone. It still regulates the flow of water in the Cauvery delta.*

Village tanks: *After the monsoon rains, south India looks like a huge expanse of lakes from the air. Since the mediaeval age rulers and wealthy temples have been donating money for the construction of storage basins. 4479 village tanks have been counted in Karnataka's Kolar district alone.*

Water for the desert city: *The city of Jodhpur in the desert state of Rajasthan had fifty reservoirs and 120 wells at the beginning of this century. A widely distributed canal network drained water from the rocky plateau nearby and supplied water to numerous storage basins located above one another on the hill-sides. Way below in the city, ground water was drawn from deep wells that had richly-decorated stone steps. Today, a modern pipeline-system supplies water to the city. Garbage is accumulating in the step-wells. Many canals outside the city were destroyed due to quarrying. Jodhpur has been facing an acute water shortage for the past ten years.*

(Continued on next page)

People's dam: *For nearly 20 years, farmers in Heggur, a village in Karnataka's drought-prone district of Bijapur, waited for the government to provide them water from the Upper Krishna dam project. In the summer of 1993, they decided to construct a dam themselves. In just 82 days they raised, with their own hands, a dam that was three hundred metres long and five metres high across the Krishna river. Now it was possible to irrigate 3000-4000 acres of land. The tragic irony: When the government's gigantic dam is completed some day, its reservoir will submerge the people's dam. However, the creators of the Heggur dam hope to achieve prosperity by then.*

Harnessing ancient methods for present-day needs

The highway from the industrial city of Pune towards the East snakes across the Deccan Plateau, past dilapidated villages. The landscape consists of barren mountain ridges and rocky plains, as far as the eye can see. Then, after a fifty kilometre drive, there is a pleasant surprise. Young trees line paths and fields, and fresh greenery is visible on the mountain slopes. Farmers returning from the fields steer loaded bullock carts. Their houses give an impression of modest affluence.

The small village of Ralegan Siddhi in western Maharashtra is touted as a model of rural development in the whole of India. Around twenty years ago, a farmer's son, Anna Hazare, began work on the restoration of natural water resources—"harvesting water", as he calls it. This was because when in 1975 he returned after ten years of military service to his native village of Ralegan Siddhi, three successive years of drought had drained the land around it. Many villagers had abandoned farming and had started working as daily wage workers. Many were illegally distilling cheap liquor from sugarcane to make ends meet. Alcohol bred hatred and strife in the village.

A deep rift divided the population of Ralegan Siddhi into masters and slaves. The high-caste Marathas, a minority of twenty percent, owned a major part of the farmland. Most of the villagers were so-called untouchables, the lowest caste of Hindu society, who today call themselves "Dalits"—the Broken Ones. Anna Hazare initially strove to eliminate mutual prejudices and to awaken a feeling of solidarity in the village. He

began by visiting houses of both communities. In order to ease the acute misery, he managed to get jobs for many villagers in a governmental poverty-alleviation programme. Together with volunteers he renovated the village temple. Slowly, people started gaining confidence in his efforts.

The drought that ravaged Maharashtra and other regions of India between 1972 and 1975 showed Anna Hazare that a reliable supply of water was the key to village development. He therefore initiated the construction of small mud dams in gullies and streams to trap scarce rainfall. "Initially we had to put up with many failures," he admits, "but gradually the underground water-veins recovered, the wells became full and we were able to water the fields once again. Soon we started producing so much food that no one needed to look outside for work any longer." With this, the economy of Ralegan Siddhi was certainly stabilised but still not crisis-proof. Anna Hazare drafted an integrated development plan that encompassed further measures for irrigation which also included animal husbandry, energy balance and the formation of co-operatives. Using his model, he regenerated the natural capacity of the soil to trap rain water and the village community was able to utilise the extra water in a manner that was ecologically sensible and socially equitable.

Working together, villagers dug trenches on the mountain slopes all around Ralegan Siddhi. Gullies were plugged with the help of small dams which halted the flow of rain water and conveyed it to numerous storage tanks. To prevent soil erosion, the villagers planted thousands of saplings on the hillocks. However, to protect the saplings, it was necessary to limit the cattle grazing grounds to the bottom of the valley and to introduce stall feeding. Anna Hazare convinced the villagers to sell a part of their livestock and invest the profits in the cultivation of fruits and vegetables. The demand for firewood was reduced by the construction of bio-gas plants and by the introduction of more efficient stoves. Government aid enabled the purchase of solar devices for heating water and for street lighting, as well as a windmill for pumping well-water into the fields. Anna Hazare reiterates that his suggestions were successful only because the villagers took them up on their own initiative. The village council has constituted committees for religion, youth, women and education. All community activities are organised by the village

committees for irrigation and general affairs. Government loans and marketing of farm produce are handled by co-operatives. A Grain Bank receives a part of the harvest from each family and lends provisions to needy people. However, these provisions have to be reimbursed after the harvest. Ralegan Siddhi has freed itself from the stranglehold of middlemen and moneylenders. It was possible to extend the area of irrigated farmland from 32 hectares to 440 hectares. If, ten years ago, tankers had to travel large distances to fetch drinking water, then today Ralegan Siddhi can supply other areas with water and vegetables.

Today, the village gives an impression of peaceful activity. The days when alcoholism and juvenile delinquency used to define village life are gone and forgotten. Marathas and Dalits now draw water from the same well and organise common marriage ceremonies, although inter-caste marriages are still few and far between. Anna Hazare has enforced a ban on tobacco and alcohol and has convinced all families to send their children to school.

For many villages in the drought-prone regions of India, Ralegan Siddhi holds out hope for a better life. The state government has recently started giving budgetary support for the development of similar projects in Maharashtra. Even in the arid areas of Kutch and Saurashtra, voluntary organisations are constructing small dams across streams and are planting new trees. Obviously, they don't bank on the waters of the Narmada reaching their doorstep some day in the distant future.

7

Who Owns the Forest?

The oldest man in his village, Chaluwaddi Madegauda, has the countenance of a man who has seen life. But when he starts narrating the history of his people, he can barely conceal his anger: "The stars in the sky are witnesses to the fact that we, the Soliga, were the first to inhabit these mountains. For years we were protected by the impenetrable forests. But then the British arrived, chopped away the trees and laid out coffee and timber plantations. They were followed by settlers from the plains who had an eye on our lands. Finally, the forest department made even hunting and clearing of forest for millet cultivation an offence. Today, most of the Soligas have lost their land. We foresee a bleak time ahead. If only someone would give us back our traditional rights over the forest. We could then once again lead a life of dignity."

The Soligas number only 20,000. Their homelands, the Billigiri-Ranga Hills near the south Indian city of Mysore, stretch to a height of 1500 m. Until a hundred years ago, the Soligas lived in the middle of the rainforest, in tiny huts made from branches and grasses. They collected honey, wild fruit and herbs. The hunting of hares, wild pigs and pheasants provided them with a complete diet.

To plant millet, the village community used to clear small stretches of forest every other year, burn the vegetation to make the soil fertile and plant their grain using hoes and shovels. When the soil was drained after a few harvests, they cleared another area for cultivation. The forest used to reclaim the previously cultivated land within a few years. But the next generation of

Soligas would clear it again only when the stock of trees had largely regenerated itself. When survival was threatened by wild animals or by disease, the community shifted to a different location which had been chosen by priests with the help of an oracle. "We live like the birds who perch here and there on a branch, only to fly away again after a short while," says Madegauda smiling.

The Forest Act has degraded the once-free forest dwellers to cheap coolies who have to accept any job they are offered. Malnutrition and disease dampen their will to live. "The Soligas are despised continuously, branded as thieves who destroy the forest," says the elder in anger. "But it is actually the outsiders who bribe the forest guards and cut trees illegally. They come from far-off places to make a quick buck here. But we have just this single homeland, where else could we live?"

The misery of a threatened community is blatantly visible in the Soliga villages. They cling desperately to their last remaining legacy—their dances. In a ballad, they praise Dodda Sampige,

Pic 13: *The exploitation of forests according to the European model has struck at the heart of India's forest-dwellers. This Soliga man grew up as a free forest nomad. Today he is dependent on alms for his survival.*

the king of the forest, who, decorated with flowers, rides a tiger. The Soligas assemble below a huge champak tree to celebrate a sacrifice with Dodda Sampige: "O, my lord with a thousand locks, pray for us, protect us! Let flowers and shoots grows forth, let buds and sprouts not wilt! May You protect us like a flower, we consecrate to You our children and grandchildren!"

India's first inhabitants—the Adivasis

Demographic surveys in India have counted the largest indigenous population here among all countries of the earth. Seventy million people call themselves Adivasis. The Hindi word means "original settlers." Yet, the Adivasis account for only seven percent of India's total population. Earlier they inhabited peripheral areas which were regarded as wilderness by others. From the Himalayas in the north to the rainforests on the southern tip of the subcontinent, from the Thar Desert in the west to the marshy forests of the north-east, the 250 Adivasi tribes have adapted themselves to the most varied of habitats and have amassed an extraordinary cultural wealth.

The Adivasis consider themselves to be a part of natural symbiosis. They worship the stars, animals and plants as deities and pacify them through festivals and sacrifices. Their farming is oriented towards basic needs and hence they preserve nature. The tribal community is not hierarchal and women enjoy a status that is more or less equal to that of men. Each community has its own history, has recorded its own knowledge of natural laws in ballads and legends which are passed down over generations by oral tradition. During festivities, which continue for several days and nights, the village communities invite their gods and ancestors to partake in the festivities and display their skills in the creation of murals, carvings, masks and body-ornaments. Yet, the more rapidly India grows into a mighty industrialised nation, the greater the area of Adivasi land that will be usurped by mines, dams and industrial complexes. An ever-increasing area of forest has to be cleared to gain new farmland for a rapidly growing population. Millions of Adivasis have already lost their lands and thereby their basis for self-determined existence. There is no place for the "forest people" in the Hindu caste system. Thus, an increasing number of Adivasis find themselves

eking out a living as peasants without rights or as coolies in the slums of cities.

For more than a hundred years now, the Adivasis have been rebelling against the loss of their rights and the destruction of forests. In the seventies the Adivasis were able to save the last of the large interconnected primeval forest areas south of the Ganges in Madhya Pradesh's Bastar district. Supported by the World Bank, the Government had planned to clear the forest and plant fast-growing conifers. The project was abandoned after thousands of Adivasis blocked forest paths and destroyed a few nurseries. In the hilly area of Chota Nagpur, west of Calcutta, the tribes of Santal, Munda, Ho and Oraon are demanding the creation of a separate state which would give them control over their natural resources. The new state is to be called "Jharkhand"—forest land.

Pic 14: *Riverside in the mountains of Bastar. Over the past 100 years, the Adivasis have rebelled time and again against their dispossession by the forest authorities. Today, Bastar harbours the last, large natural forests south of the Himalayas.*

The nationalisation of forests

The word "jungle" comes from the Hindi word for forest. Tropical rainforests flourish in the mountains on the south-western coast of India and also in the north-east. The mountain ranges in the interiors of the country are covered with deciduous trees, whereas oak trees and conifers dominate the landscape in the Himalayas. In all these areas, Hindus worship their forest goddess Aranyani as the primary source of life and fertility. Since time immemorial, people in search of God have retreated to meditate in the solitude of forests.

Till the middle of the 19th century, Indian forests were exploited with care. Communities ensured a sustainable exploitation of forests in the vicinity of villages. Although the rulers exercised nominal ownership rights over the forests, it was their local governors who managed natural resources. The extraction of wood did not endanger the stock because it was neither exported nor industrially processed into paper, charcoal or furniture. As opposed to this, non-wood products such as honey, resins, fruits, herbs, grasses and bamboo, which were available free of cost, were of greater significance to the villagers.

However, British colonial rulers converted forests into a source of revenue. From the wood industry's point of view, villagers who went collecting in the woods were destructive pests. Consequently, the colonial government introduced the first For-

FORESTS AND INDIAN CIVILISATION

The Bengali poet and Nobel-laureate Rabindranath Tagore (1861-1941) refers to the forest as the cradle of civilisation in his work Tapovan:

"India's best philosophical ideas arose far from the crowds, there, where man dwells in the intimate vicinity of trees, rivers and lakes. The tranquillity of the forest fostered man's spiritual development. Through the different processes of rejuvenation occurring in the forest and their scenario that changed with seasons and species, their sound and their smells, the culture of the forest constantly inspired Indian society to newer heights. The unifying principle of life in diversity and in democratic pluralism thus became the guiding principle of Indian civilisation."

Retranslated from: Vandana Shiva, *Das Geschlecht des Lebens–Frauen, ökologie und Dritte Welt*, Rotbuch–Verlag, Berlin, 1989

est Act in 1865 and restricted collection in forests. The Forest Act of 1878 divided forests into three economic categories: particularly inaccessible or ecologically valuable forests, e.g., those in the headwaters of large rivers, were placed under strict protection that excluded any human influence whatsoever. The lion's share of forests was reserved by the government for immediate or future exploitation ("reserved forest"). Village communities were permitted to use and manage only small forest areas in the vicinity as grazing grounds. Since then, the Adivasis have been in conflict with the law each time they have tried to use their forests to sustain themselves like their forefathers. Open hostility rages between forest dwellers and forest officials.

By virtue of being the Inspector-General of Forests in British India, it was a German who had a major role to play in the formulation of these laws: the biologist Dietrich Brandis (1824-1907) from Bonn. In *Jungle Book*, Rudyard Kipling refers to him as the "gigantic German Müller, the Head Forest Officer from Burma to Bombay."

Brandis is credited with having adapted the so-called "scientific" forestry that was being practised in Europe since the beginning of the 19th century, to conditions in the Tropics. His methods, tested in India, were also implemented in other British colonies all over the world.

In 1927, the Forest Act was amended; the state's monopoly over forests was enlarged and the responsibilities of forest officials were specified. This law continues to serve as a basis for the management of Indian forests till today.

In 1982, when the Central Government wanted to further restrict the rural population's rights to use forests, environmentalists and civil rights activists organised protests all over the country. Thereafter, the serving Prime Minister, Rajiv Gandhi, divested the Agriculture Ministry of its control of forests and entrusted the Department of Environment, which was being headed personally by him at that time, with this responsibility.

In 1988, the Indian Parliament passed a resolution on forest policy, which entrusted the forestry office with the protection of forests and also placed environmental protection ahead of the realisation of profits. For the first time, it also recognised the Adivasi's right to earn his livelihood from forest products. The Ministry of Environment is presently preparing a new ver-

sion of the Forest Act of 1927. The draft envisages a strengthening of the powers of the forest administration to protect forests, and also the possibility of co-operation between forest authorities and village communities.

The current liberalisation of the economy has encouraged the wood-working industry to once again place an old demand on the table. Paper mills and saw mills want to lease so-called "wasteland"—degenerated forest land—from the government and plant fast-growing trees on it to create a source of raw material for their factories. Environmentalists and grass-root workers warn against depriving the Adivasis and other sections of the rural population of further sources of livelihood because even "wasteland" is used for grazing and collection.

It is a well-known fact among the rural population that corrupt politicians and forest officials earn enormous profits illegally through the government's all-powerful bureaucratic system. Since the Adivasis and other villagers are virtually prohibited from entering the forests, they have lost their interest in protecting it, and thus the forest has lost a crucial ally in its fight for survival. To earn a little money during the lean season, many Adivasi women are now forced to collect firewood and carry it for miles on their head to the nearest market. Ironically, those with vested interests in industry and politics hold the Adivasis responsible for the rapid destruction of India's forests.

Destruction of forests leads to poverty

Each year, India loses 1.5 million hectares of forest, which is 2.3% of the entire forest cover. In the entire world, only Nepal surpasses India in its rate of destruction. The conversion of forest into farmland and governmental development projects inflict the deepest wounds. Even in charcoal production, India leads the world with 240 million cubic metres per annum, trailed by China (177 million cubic metres per annum). The forest authority cuts natural mixed forests, markets their wood and then replaces them by planting eucalyptus or teak in monocultures—wood plantations for the timber industry.

Firewood, the energy source for 400 million rural people, has become twice as expensive over the last two decades. The legendary teak forests of central India can no longer meet the

demand for hardwoods. Burma is flooding the Indian markets with its teakwood. Meanwhile even bamboo has become scarce—paper mills being the largest consumers. After wiping out forests in their vicinity, paper mills in south India are now obtaining a part of their raw material from Assam, which is over 2000 km away.

A healthy forest has the capacity to absorb heavy monsoon rain like a sponge and then slowly release it into streams and rivers. Without this protective cover, rain waters wash soil off the hills and carry it into the valleys. On the steep slopes of the Himalayas, entire mountain faces are dislodged during the monsoon, and bury villages and fields and obstruct the flow of rivers. The sediments, swept away by the waters from the mountains, are deposited in the plains and fill river beds. As a result, heavy showers lead to tidal waves which wreak havoc in the countryside. Over the last thirty years, India's forest cover has declined from twenty percent to ten percent of the total area. At the same time, the area threatened by floods has increased from 25 to 40 million hectares.

In the absence of a protective green cover, the scorching sun hardens the soil, which then loses its capacity to soak water. As a result, wells and rivers run dry. The Kalahandi region, for instance, a mountainous area in western Orissa became a permanent drought-hit area after deforestation. Single mothers there have been known to sell their children because they could no longer afford to feed them. In June 1993, two hundred people died of starvation in the wake of a famine in the neighbouring state of Bihar, and that too in the districts of Palamau and Garwaha which were once famous for their luxuriant forests.

Because the forest is dying, women are forced to walk long distances to collect firewood and water. Because forest products are becoming increasingly scarce and expensive, many craftsmen can no longer earn a living and are abandoning their crafts. Today, most potters have already started heating their kilns with old rubber-tyres because wood has become too expensive. However, the hardest-hit is the Adivasi, because his entire life is closely linked with the forest.

The poverty in rural areas is forcing millions of people to migrate to the cities. Using official figures, the Indian sociologist Walter Fernandes calculated that, in the period between 1951

and 1990, large public development projects—construction of roads and railways, dams, mines, wildlife sanctuaries—had displaced 20 million people from their land. Then of course there are the countless millions whose existence was destroyed by droughts and floods, whose farmland was devastated or became marshy, whose wells ran dry, whose cattle died of starvation.

Ineffective afforestation programmes

Encouraged and supported by the World Bank, India and around fifty other developing countries of the South initiated large-scale afforestation programmes in the eighties. Under the name of "social forestry," degraded forest areas and so-called "wastelands" were to be made green with the assistance of the rural population. Mainly fast-growing trees such as eucalyptus, which can be harvested and sold to the industry after 5-7 years, were planted. In 1980, the government in New Delhi passed the Forest Conservation Act, which directs the states to obtain approval from the Ministry of Environment in New Delhi for each instance of conversion of forest land for the purpose of development projects and to afforest at least an equal area of wasteland.

In India, around eighty percent of the saplings perished because the villagers were not interested in maintaining them—eucalyptus provides neither fodder nor firewood. Wealthy farmers, on the other hand, took full advantage of the subsidies and planted trees on fertile farmland. "In most cases, the social as well as the forestry aspects were neglected," writes the Indian author S. R. Ramaswamy. He summarises the criticism of environmentalists: "Commercial wood cultivation was touted as social forestry!" In the interim, even the World Bank has admitted that the integration of the rural population in "social forestry" has not been a success.

Even the legally stipulated "compensatory" afforestation, which incidentally is likewise carried out using fast-growing monocultures, could not arrest the destruction of forests. In the ten years since the implementation of the Forest Conservation Act, the Ministry of Environment in New Delhi has approved the clearing of 330,000 hectares of forests. A working group within the Ministry calculated that, over the same period, only 37,000 hectares of land were greened as "compensation". Only one-tenth

of the Rs. 600 million provided by New Delhi for this purpose was utilised—the balance mysteriously disappeared!

People are slowly realising that governmental measures for afforestation that do not involve the local population are destined to fail. In many states, the forest authority is now setting up forest co-operatives which give the village population a share in the yield from the forest. As *quid pro quo* for the effective protection of valuable forest against poaching, the villagers are allowed to collect non-wood products even in "reserved" forests and are assisted in marketing these products. The name "joint forestry management" is, however, misleading because the populace does not get a true right to co-determination in the management of forests. The authorities presumably believe that the "illiterate villagers" would, if they are given jurisdiction over forests, handle the forest in much the same way as the government—i.e., try to convert wood into money as quickly as possible.

In the present system of forest management, all parties evidently seem to be striving for the speedy demise of their protege: the forest authority which is expected to generate as much money as possible for the state exchequer; the private timber companies whose owners want to become rich overnight; and finally many forest dwellers who have no other choice but to carry the remains of the basis of their existence to the market and to buy rice and salt with the proceeds.

The holy groves of the Earth Mother

A dull thud in the chassis of my vehicle makes my heart skip a beat. I press down on the accelerator and propel the frail limousine over stones and bumps onto a slope. Reddish-brown dust enters through the cracks in the car's body and settles on the lips, irritates the throat and the eyes. How will this adventure end? We are in search of the forest.

We departed from the city of Pune at the crack of dawn. After fifty kilometres, the asphalt road abruptly gave way to a rough path. From the window we can only see parched mountainsides. A mango tree on a harvested millet field looks alone and lost, spared the axe only because of its fruit.

It is almost noon when the climb ends in a tiny hamlet.

We set out on foot, down into the valley, across a dried river bed, and then again uphill till we can rest in the shadow of huge bamboos. We have finally reached the village of Mangaon, whose inhabitants guard a valuable treasure: ten hectares of primeval forest, the holy grove of Janni. "She is the goddess of the Earth," explains an old village woman. "Janni protects us from evil and disease. But he who breaks her laws is punished severely. A young man, who cut and sold a tree from Janni's grove, was afflicted by malaria and died. Many a time, timber merchants have offered us a huge amount of money to allow them to cut the forest. But we won't allow it, we are proud of this grove which we are guarding for Janni."

When we enter the forest, I feel as though I am entering a cathedral. The air is cool, the hush is broken only by the chirping of birds and insects. Blooming shrubs flourish under the towering crowns of the trees. Lianas, as thick as a man's arm, snake through the underbrush. We climb up a small hill that is covered with boulders and is crowned by the temple of Janni. The goddess is depicted by a conical stone which has been painted with turmeric paste by the faithful. I ask my companion, the ethno-botanist Dr. Archana Godbole, about the probable age of this forest. "We are truly standing in the vestiges of the primeval forest that once covered these mountains," she replies. "Janni's grove has been saved from human influences for a long time, the gigantic Lianas, the age of the trees and the thick layer of leaves on the floor of the forest, all show me this. The moss-growth on rocks and tree-trunks indicates that nature can develop here undisturbed."

All living creatures in this grove are dedicated to the goddess. Hunting or grazing is strictly prohibited, only deadwood can be taken from the forest. Archana's colleagues have counted ninety different varieties of plants here. Even porcupines and the rare, tiny mouse deer (*tragulus meminna*) have been sighted here. The protection of this unique biotop also makes economic sense: a stream, originating in Janni's grove, provides Mangaon's inhabitants with clean drinking water.

Even the classical poet Kalidasa mentions a holy grove in his work *Vikramorvasiyam*, written around 300 BC. Scientists have counted two hundred such protected forests in Maharashtra's western ghats alone. In the north-eastern state of Meghalaya,

NATURE CONSERVATION VERSUS HUMAN RIGHTS?

Roughly one hundred kilometers north of Mumbai, on the crest of the Sahyadri mountains, lies the holy grove of Bhimashankar which feeds the springs of the Bhima river. In the heart of the forest stands a temple of Lord Shiva, a famous pilgrimage site. The vicinity is the home of 3000 Adivasis of the Mahadeo Koli tribe. In 1985, when the forest department declared the holy grove and adjoining forests a wildlife sanctuary, the Mahadeo Koli suddenly lost all rights over their forest. Because hunting is now strictly forbidden, wild boar are multiplying, leading to much destruction in the farmers' fields. The Adivasis estimate this loss at half a million rupees per year. Many farmers are desperate, they cannot feed their families any longer. Complaints to the forest department have gone unanswered.

The Wildlife Protection Act of 1972 recommends the resettlement of all forest dwellers outside sanctuaries and national parks. In many places this effort is met with resistance. But even among nature conservationists, who by majority belong to the middle and upper classes and have little or no experience with life in the villages, the belief that the Adivasis are responsible for destroying the forest is widely held.

This conflict originates from divergent interests. While the Adivasis view the forest as their home, conservationists try to protect it as a living resource, and they regard any human interference as harmful. "The Adivasis know that their survival depends on the forest, that's why they protect and nourish it," opposes Dr. B.D. Sharma, ex-Commissioner for Scheduled Castes and Scheduled Tribes of the Government of India. "From personal experience I can tell that neither foresters nor scientists are the true experts in forestry, it's the Adivasi! If one would only let them share the bounty of the forest, they would deliver useful services in the protection of nature."

Promode Kanth, the director of the Kalakkad-Mundanthurai Tiger Reserve in Tamil Nadu tried a unique experiment in which he trained 25 youths from the Kani tribe as forest guards. But he had to take a special permission from the state government because the recruitment law demands a school certificate and a body height which can hardly be matched by any Adivasi. "They may not be tall, but they are able and willing to traverse long distances in the forest and check out even remote areas," Kanth points out. Convinced by the success of his experiment Kanth has stopped the resettlement of Adivasis from the tiger reserve.

Sources: Amit Mitra: "Caught between Boars and Bureaucracy", *Down to Earth*, 15.1.1994; Mukund Padmanabhan: "Tribals in Khaki", *The Indian Express*, Pune 24.11.1993; Author's conversation with Dr. B.D. Sharma, Mumbai, 6.2.1994

they all add up to an area of one thousand square kilometres. Till today, this tradition is living and vibrant in Rajasthan and southern India, but more so in the settlement areas of the Adivasis in central India.

Development projects have destroyed many of India's holy groves. Others have been cleared by the forest authorities and converted into timber plantations. At many places, reverence for the Earth Mother is disappearing under the influence of modernity, but Dr. Godbole has also observed that villagers protect their groves for ecological reasons: "The people know for certain that the forest provides them drinking water and reduces farm pests." Perhaps holy groves will some day form the basic units for the reforestation of these barren mountains?

Women embrace the trees

Since the 15th century, the Bishnoi—a Hindu sect—have been practising nature conservation out of religious conviction. Their master, Guru Maharaj Jambaji, witnessed in his youth how the population of entire villages was wiped out during a famine. Thereafter he urged villagers in the desert of Rajasthan to plant trees and refrain from killing any living creature. In 1734 when woodcutters and soldiers came to the village Khejadali to cut trees for a new palace on the order of the Maharaja of Jodhpur, the farmer-wife Amritdevi alerted her neighbours and showed them how they could save their trees by embracing the trunks. "Take my life before you kill this tree!" she said to the soldiers. But they showed no mercy and 363 villagers died for their trees. Today, Amritdevi has found emulators all over India.

Since the sixties, most of the men from Himalayan villages have been migrating to cities in search of work. For this reason, Chandi Prasad Bhatt, a Gandhian, organised the people of Mandal village in Uttar Pradesh into a development association known as the "Dasholi Gram Swarajya Mandal". He established small industries to process wood and resins, and has thus created jobs. On 24th April 1973, a group of woodcutters descended on Mandal to cut ash trees for a sports goods company located in distant Allahabad. They were confronted by angry protesting village women who had embraced the trees that had been marked for axing. Unable to complete their mission, the men

beat a hasty retreat. "Chipko Andolan," the movement to embrace trees, was born.

News of the Mandal women's success spread like wildfire in the districts of Chamoli, Tehri Garhwal and Kumaon. In many other locations, women followed this example, prevented woodcutters from carrying out their work, stormed timber auctions, assembled for rallies in the cities and planted trees on barren slopes.

Sudesh Devi, an activist from the village of Rampur, described the protest against a timber auction in the city of Narendra Nagar: "The building was heavily guarded by the police. We women broke through the police cordon, stormed the auction hall and sat down in the chairs of the mighty lords. They wanted to stop the auction there and then but we demanded that people hear us. We held the building till late into the night; then we were arrested and locked in jail for fifteen days."

Above all, in India it is women who have a close relationship with the forest. "The forest is our life," explains Sudesh

Pic 15: *By embracing trees, "uneducated village women" in the Himalayas taught Indian society and the world the way to save threatened forests effectively.*

Devi, "it gives us firewood, fodder and medicinal herbs. The more one clears forests the harder our daily work becomes." The Chipko-women have often had to overcome the opposition of their husbands who were interested in making a quick profit. For instance, in the village of Doongri, the village council had already approved the clearing of a piece of forest before the women of the village stepped in and saved it.

The Chipko movement began in Chamoli as a popular struggle for the right to use forests in the vicinity of villages. The former journalist, Sunderlal Bahuguna, who organised development work in Tehri Garwhal, joined the movement and made it world-famous as a network for the protection of forests. The government had to ultimately decree a ban on the felling of trees in the hill districts of Uttar Pradesh. Yet, the spontaneous character of the campaigns and the petty political rivalry between the two male protagonists, Bhatt and Bahuguna, weakened the movement. A dispute broke out amongst the activists on the question of whether to support Bahuguna's belief that the forest should be protected from everyone or Bhatt's view that it could be used by the local inhabitants for commercial purposes as a source of income. Today, many women have dropped out of the movement leaving the coast clear for the timber industry. Recently the state government of Uttar Pradesh lifted the ban on the felling of trees in the hills. But the message of Chipko women travelled across the world: environmental protection is by no means a hobby of urban intellectuals, rather it is a bitter necessity for the survival of millions of poor villagers.

In 1950, the district of Uttara Kannada in Karnataka had a forest cover of eighty percent; today this is barely twenty five percent. Numerous mega-dam projects, the nuclear power plants at Kaiga and countless teak and eucalyptus plantations are responsible for the destruction of evergreen tropical forests in the state. In September 1983, the inhabitants of the village of Salkani decided to act against the deforestation. 160 women, men and children embraced the trees in the nearby forest and prevented employees of the forest department from cutting them. Within a few months, other villages joined the Appiko movement (in Kannada "Appiko" means "to embrace"). Marches, street plays and slide shows were staged all over the country to convince more people of the need to save forests. Appiko activists planted

trees that provide fodder and firewood, and designed improved stoves that require less wood. "The goal of the movement is to establish a harmonious relationship between man and nature," writes Pandurang Hegde, one of the organisers. "We want to impart a new meaning to the concept of development. Environmental protection groups should form the basis for a sustainable and lasting economic system." Appiko was able to celebrate a major success in 1990: the semi-governmental paper factory Karnataka Pulpwood Limited, which wanted to plant eucalyptus trees on the pastures of many villages, was shut down.

People march to save the forest

The success of Appiko gave impetus to other movements for the protection of forests in the entire mountain range of the western ghats, which stretch 1500 kilometres along the western coast of India. On November 1, 1987, environmentalists assembled in Kanyakumari at the southern tip of the subcontinent and in Nawapur in Maharashtra, for a people's march, following Mahatma Gandhi's tradition. 140 organisations from six states worked together in the "Save the Western Ghats March." The participants organised slide-shows and discussions to sharpen environmental awareness among villagers. At the same time, they also surveyed the condition of forests in the hills. On January 29, 1988, both groups met in Goa. Jagdish Godbole, one of the organisers, describes his impressions: "Villagers everywhere are struggling with the consequences of deforestation: lack of drinking water, scarcity of firewood, loss of fodder. Although most of the hill villages get more than 2500 millimetres rain annually, there is hardly any water to drink there during the summer!" The western ghats network exists till today and supports local initiatives in forest conservation and afforestation.

By staging a 900 kilometre long march in October 1993, environmentalists sought to heighten awareness about the destruction of the Aravalli mountains which stretch across Gujarat and Rajasthan all the way to Delhi. They were mainly protesting against the uncontrolled quarrying of natural stone in an extremely sensitive ecosystem. In the 17th century, the Aravalli mountains supplied white marble for the construction of the world-famous mausoleum, the Taj Mahal in the city of Agra.

Today, in Rajasthan alone, 350,000 landless persons toil under the most brutal conditions in stone quarries. "The abusive exploitation rips gigantic holes in the land," complains Babulal Sharma, co-ordinator of the Aravalli March at the Gandhi Peace Foundation in New Delhi. "The stone quarries contribute substantially to deforestation and destroy the natural water distribution thereby creating an artificial drought in the summer!" The result: today the Thar Desert is expanding towards the Indian capital at a rate of 1.5 kilometres per year! The activists arrived at the city of Delhi in early November and, along with sympathetic students, staged a sit-in before Parliament House. They handed over a memorandum to the then Environment Minister, Kamal Nath, in which they demanded strict compliance with environmental laws as well as effective checks on stone quarrying.

In the Indian forest conservation movement, urban intellectuals are joining hands with the impoverished rural populace. In their non-violent campaigns, the struggle for survival fuses together with the right to self-determination which also concerns the controlled exploitation of local natural resources. The movement has had an effect that stretches far beyond the borders of the country. Chandi Prasad Bhatt is a recipient of the Philippine Magsaysay Award. Sunderlal Bahuguna was honoured with the Right Livelihood Award by the Jakob von Uexkull Foundation.

Indian companies are today sanctimoniously boasting about their efforts to promote afforestation. Forestry is slowly shifting its focus from timber yield to conservation. Even then, India's trees will continue to die until village communities regain their right to utilise the forest.

8

Health For All

Among travellers, India is known as one of many tropical countries that are notorious as centres of infection for dangerous diseases. During my first few visits to the tropics, I too had to learn that my organism—conditioned in Europe—was no match for tropical conditions. It really got me in the erstwhile Shangri-La of the Hippies—the Himalayan kingdom of Nepal. For weeks I lay on a bug-infested bed in an economy hotel in Kathmandu. Stories of a hepatitis wave made their rounds among long-term travellers, but even these were not enough to snap me out of my lethargy. It was only when I felt death approaching that I gathered enough strength to visit a doctor.

Following the advice of a friend, I found myself in the waiting room of a Nepali "alternative doctor" along with a dozen other whites. I soon discovered the reason for the long waiting period: the doctor spent a surprisingly long time with each of his patients. When my turn arrived, he felt my pulse, checked the colour of my eyes, my breathing, inquired about my eating and living habits. His diagnosis struck me like lightning: Hepatitis! I saw myself being evacuated by air to Frankfurt, but the Vaidya calmed me down by assuring me that it would all be over in three weeks if I followed his instructions exactly. The most important thing was a diet that would relieve my liver completely—no oil, nothing sour or roasted. I was supposed to take iron powder in the morning and evening to restore my blood, accompanied by a green herbal pill that would strengthen the stomach. I bought some utensils and a kerosene stove and began preparing my food according to his instructions. The leth-

argy disappeared. I could venture into the streets again. The Vaidya's promise came true: three weeks after visiting his clinic, I undertook a trek with a friend. A doctor in Berlin, who checked my blood a few months later, certified normal functioning of the liver. From then on, I was no longer afraid of dreaded tropical diseases.

Traditional holistic healing

The unique synthesis of different communities and cultures on the Indian subcontinent gave rise to a variety of healing methods. These methods continue to be practised today and to mutually enrich each other. The Adivasis can successfully cure a majority of common diseases with herbal potions or magical rites. Their art of healing, which is developed and inherited within families of priests or village communities, is based on the experience of many generations and is closely linked to life in the forest. It is estimated that the 250 Adivasi tribes in the country's various eco-zones have together mastered the use of over 7000 medicinal plants. Their medicine men use herbs to prevent infections, to cure fever and heal wounds and even treat organ problems and fractures. Mental diseases are attributed to evil spirits. In a trance, the healer holds a dialogue with the protective deity, gains knowledge of the evil curse and then tries to neutralise it with a counter-curse. The country's first Centre for Adivasi Medicine was established in 1993 in the hills of Kerala, on the initiative of the local government there.

Based on the Adivasis' knowledge of herbs, local folk medicine has established itself all over India and uses forms of therapy drawn from all alternative systems of medicine. Around 700,000 midwives, 300,000 herbal doctors, 60,000 bone-setters, 60,000 snake-bite healers as well as millions of housewives who have gained the reputation of specialists in their communities, treat the day-to-day ailments of many rural people for whom the way to a hospital is too far or too expensive. "Nature offers us a wealth of materials for our medicines. We can cure practically anything, excluding cancer, tuberculosis, polio and a few other serious diseases," claims Sahadeva Raju, an Adivasi medicine man from Bastar in central India. Today, Raju offers his art of healing on the streets of Bangalore.

Closely linked to the Hindu culture of the Aryan migrants is the holistic system of Ayurveda. Basing themselves on the Vedas, the Vaidyas (Hindu ayurvedic doctors) systematised the native knowledge of herbs into a logically-structured system of medicine, which was recorded for the first time during Buddha's life, i.e., in the 6th century BC and later, by the scholars Sushruta and Charaka. Ayurveda means "the knowledge of life," and hence encompasses not only the cause and treatment of diseases but also their prevention through a healthy lifestyle and through spiritual and mental fulfillment. It is based on the doctrine of the five elements: ether, wind, water, air and earth, of which the world is composed. These are condensed into three life forces (*doshas*) in the human organism: "Vata" represents movement, feeling, soul; "Pitta" stands for physiology and metabolism; "Kappa" means corporeality and structure. If the balance of these three forces is disturbed by internal or external influences, then the organism becomes sick. Ayurvedic treatment therefore tries to strengthen particular life-forces by using herbal potions, diet, massage, accupressure and yoga; to weaken others and thus recreates the original balance. In Tamil Nadu, this art has evolved into a special form of healing under the name of Siddha, which is based primarily on dietetics.

Apart from 120,000 college-educated Ayurvedic doctors, there are an equal number of Vaidyas who have inherited their knowledge from their fathers or uncles. After a thorough inspection, the World Health Organisation recognised Ayurveda as a health-therapy concept in 1979 and recommended it especially for developing countries. Even in Germany and other highly industrialised countries, this ancient Indian art of healing is gaining an increasing number of followers.

In the wake of Islamic conquests, the Persian adaptation of ancient Greek medicine came to India in the 12th century AD. The Unani system entered into a vibrant exchange with Ayurveda and Siddha and, as a result, both systems strongly resemble each other. However, Unani is based on classical Arabic texts and not on Hindu texts.

Homeopathy, developed by the German S. Hahnemann in the early 19th century, has gained the world's largest following in India where almost a million homeopathic doctors practise.

Tibetan refugees brought *Amchi* medicine from their homeland to India. Today it remains a synthesis of Indian, Persian and Chinese healing methods, especially suited for the treatment of asthma, diabetes, rheumatism and other chronic ailments. In the Himalayan town of Dharamshala—the residence of the Dalai Lama—the Tibetan government-in-exile runs the Amchi Academy where young Tibetans can learn and research ancient healing techniques.

Public health systems fail to meet objectives

Since its introduction during the colonial era, Western allopathic medicine is held in high esteem in India, primarily because it can cure fatal infections and produces an effect much more quickly than native healing techniques. Also because it is associated with substantially higher costs it carries a higher prestige value. All governments of independent India have espoused and continue to espouse general medical care: Health for all! Like the British model, treatment in government hospitals is basically free of cost. For this purpose, the government usually allocates around five percent of the national budget. The public health system, however, relies exclusively on Western classical medicine, called allopathy in India. The traditional healing systems receive only three percent of the health budget.

In the beginning, this health policy demonstrated remarkable results: fatal infections of malaria, typhoid, cholera and other pathogens declined considerably. The average life expectancy rose from 32 years in 1947 to 58 years in 1990. Nevertheless, limits were also recognised in the late sixties. Infectious diseases increased again, infant mortality remained more or less at the same high level. The reason, as concluded by numerous studies, lay in the limited accessibility to state-owned health facilities by those who needed them the most—the poor in the urban and rural areas. Owing to this, there arose in the eighties a basic health service with presently more than a million public health centres across the entire country. Many of these units function unsatisfactorily because their doctors are not properly motivated and also because the populace is not involved appropriately. The public health service also suffers from a lack of acceptance because it is associated with the forced implementation of unpopular sterilisation programmes for family planning.

Dr. N. H. Antia, who heads the private aid organisation, Foundation for Research in Community Health, criticises the health system's rigid orientation to Western medicine—a system that fails to do justice to the conditions in India. In his opinion this has distorted the professional ethics of the medical community, with the result that today many physicians are more concerned with their own prestige and pockets than with the well-being of their patients. The government concentrates seventy percent of all finances on cities where there are more than 500,000 hospital beds, whereas the rural areas have to be content with 110,000 beds (figures for 1988). "By no means do the ills stem from a lack of funds or skilled personnel, rather they stem from an unbalanced distribution and utilisation of the same. Medical care has been turned into a big business of diseases and human suffering. Since the affected people can hardly articulate their dissatisfaction, the system itself represents a threat to public health!"

Critics such as Dr. Antia suggest that native healing techniques should be used more widely, and that voluntary developmental agencies be entrusted with medical care in rural areas. They are pleading for a gradual distancing from Western standards and towards an indigenous model of folk medicine.

New impulses to revive Indian folk medicine

"I can bring children more gently into the world than an educated doctor," claims fifty-year old Siddhamma, a traditional midwife of the Soliga-Adivasis from the south Indian Billigiri-Ranga Hills. "I don't make the pregnant woman lie down; rather I let her sit, relaxed, the back leaning, legs outstretched. When the delivery is delayed, I massage the pregnant woman's stomach with oil and make her smell a herbal medicine. The main thing here is to convince the parents that there is no danger. I have always been able to avoid a caesarean section, even if I sometimes have to wait three or four days for the baby. After the delivery, I mix leaves and roots of the mandesige-herb with pepper powder and tamarind into a paste, which the mother has to eat thrice a day. This strengthens her body and stimulates lactation."

Siddhamma is held in high esteem by young and old alike. Her warm-hearted and jovial nature does not in the least fit the

stereotype of a "herb-witch," yet she is the repository of a profound knowledge which she inherited from her mother and grandmother and which she has further refined over decades of practice. For instance, she uses the leaves of the lantana plant (*lantana camera*), imported from America just one hundred years ago, to treat wounds and skin eczema. Siddhamma, herself a mother of three daughters, has gently delivered hundreds of babies—including twins—without complications, as she proudly says. "If the baby does not cry, I eat garlic, blow my breath into its ear and call it by its name. It always works!"

Siddhamma works closely with the physician Dr.H. Sudarshan, who visited the Billigiri-Ranga Hills 13 years ago and decided to help the Soligas: "I was very naive at that time and thought that my knowledge of medicine would be able to mitigate their misery. But right during the first delivery, I became desperate because the Soliga-woman did not want to lie down on the delivery table. I discovered later that Adivasi women give birth to children while squatting. I took this to be a superstition,

Pic 16: *Siddhamma, traditional midwife of the Soliga tribals, touches the face of a young patient gently, feels her pulse, massages her temples. Later she will bring the leaves of the gumete-plant from the forest, rub them in her hands and administer a few drops of the juice to the girl. The feverish illness will soon subside.*

but today I know that the earth's gravity eases labour. I must confess that I have learnt as much from them as they have from me!"

Dr. Sudarshan and his colleagues are trying to incorporate the healing techniques of the Adivasis into their medical welfare work as part of a development project, the Vivekananda Girijan Kalyana Kendra. In the herbal gardens there are hundreds of different medicinal plants which are processed into medical preparations with the help of the Soliga healers. "Barefoot doctors", trained by the project, regularly visit remote villages in the forest, treat the sick and vaccinate the newly-born. Only serious cases that require surgery or treatment with antibiotics are referred to the clinic.

"The traditional healing methods of the Soligas are best suited to life in the forest," explains Dr. Sudarshan. "Their effect always surprises me. Even then we are yet to observe a therapy that is dangerous and hence needs to be discontinued. Our documentation till now includes 310 different medicinal plants that are used by the Soligas and are known even to children. In Soliga medicine, it all depends on the correct method of application of a medicine and on the participation of the community. Both play an important psychological role in the healing process."

Today, an awe for the "Gods in White" prevails among the lower strata of society and lower castes in India. Many middle-class city dwellers are, however, again turning to the old forms of therapy which promise greater success, especially in the case of chronic ailments and which do not cause any negative side-effects. The news magazine *India Today* has reported a "dramatic resurrection" of traditional systems of medicine. Public research institutes and large hospitals are analysing their effects. The manufacturers of Ayurvedic preparations are recording a boom in sales. World-famous pharmaceutical companies, even German companies among them, are now analysing Ayurvedic preparations, presumably with the intention of manufacturing the active ingredients artificially and then marketing them. According to official sources, in the budget year 1992–93, India exported Ayurvedic medicines valued at Rs. 400 million of which one-eighth went to Germany.

In Germany, a Study Group of Scientific Ayurveda has been founded and the initiator, Prof. Dr. G.H. Ott, Chief Surgeon at

the Evangelical Hospital in Bonn-Bad Godesberg, wants to verify Ayurvedic therapies scientifically and convince the world of the efficacy of the Indian art of healing with demonstrable results: "Classical medicine is often at a loss in the case of many nervous disorders, rheumatism, cancer and in geriatric disorders. Ayurveda provides a solution to many people in these cases. Of course difficulties arise while comparing the two because of the fundamental differences in both systems of medicine in viewing the human being and the world. But I am convinced that they can complement each other significantly."

Prof. Ott has been studying Ayurveda for the last fifteen years and has tried a few therapies on himself. In summer 1994, he invited two Indian Vaidyas to Germany to treat a few of his patients. These therapies are to be observed and evaluated scientifically. Prof. Ott says: "The doubts regarding Ayurveda stem from Western medicine's views on man and health. We don't have any proper idea of the human soul and what influence the environment or the social structure, for instance, have on this corporeality. Many colleagues try to protect themselves by rejecting new knowledge!"

Pic 17: *A hawker selling "deshi medicines", traditional medicinal herbs and tonics. One also comes across quacks who make their money by selling animal products such as lizard tails and tiger-claws.*

In India, fresh attempts are now being made to improve medical care for the rural population by reviving traditional therapies. For instance, the Academy for Development Science (described above) works with traditional healers of the region and propagates the cultivation of medicinal herbs that are threatened with extinction due to the destruction of forests. Its Director, Darshan Shankar, is optimistic: "I promise that each village in India can ensure medical care independently, if only one were to promote folk medicine suitably. I know a lot of poor people here who have to spend a substantial part of their income on expensive medicines, even though there are first-class remedies that are available free of cost in front of their homes and in the forest. A medicinal herb garden should be planted in each administrative district for breeding and demonstration purposes. One doesn't need any authority for this; local citizens' action committees could do it on their own and after 10 years the movement would have acquired a momentum of its own."

However, certain dangers lurk behind the revival of traditional therapies. The commercial exploitation of traditional herbal preparations and therapies once again raises the question of protection of intellectual property rights, a matter that has to be resolved on an international level (*see box*).

Secondly, today many medicinal plants are already threatened with extinction because of improper and excessive collection. According to Dr. Sudarshan's observations, the Adivasis pluck only a limited quantity of plants and take only those parts of the plant that are actually needed. Pharmaceutical companies, on the other hand, hire outsiders as daily wagers to collect medicinal plants which are then bought on the basis of weight. As a result, entire plant populations are often eradicated completely.

In 1993, Darshan Shankar established the Foundation for Revitalisation of Local Health Traditions with the help of scientist friends and donations from Europe. The organisation is working together with the forest authorities of Karnataka, Kerala and Tamil Nadu to establish thirty medicinal plant sanctuaries in different vegetation zones of south India. Apart from that, there is also a plan to create a network of breeding stations and herbal gardens, which would provide endangered medicinal plants for public use and for research purposes. The foundation wants to encourage pharmaceutical companies that manufacture herbal

BIOTECHNOLOGY AND THE RIGHT TO INTELLECTUAL PROPERTY
INTERVIEW WITH THE GENETICIST DR. SUMAN SAHAI

Multinational pharmaceutical companies are investigating traditional healing practices in many countries of the South in order to cheaply develop and patent new "nature" drugs. With patenting, they are able to generate huge profits in a protected market. The real inventors however, indigenous people and other rural communities, are left empty-handed. The provisions for patenting of life forms which have been documented in the GATT-treaty of December 1993 and the rapid development of biotechnology have spurred discussions about how traditional communities can be protected against exploitation. Scientists and environmentalists in New Delhi have joined together in the "Gene Campaign" to pressurise the government to protect the intellectual property rights of rural communities more effectively. On April 12, 1994, the author spoke to Dr. Suman Sahai, Director of the "Green Campaign" who is also teaching human genetics at the University of Heidelberg. Excerpts:

Question: Why is "Gene Campaign" agitating against the GATT treaty?

Dr. Suman Sahai: The government has signed this treaty without consulting the people. We are especially apprehensive about the provision for patenting of life forms, since this threatens seed pools, the economic base of farmers, because it endangers the food security of the whole nation and because it violates traditional communities' rights over medicinal plants and their application.

Question: India has signed the International Convention for the Protection of Biodiversity which was instituted in 1992 in Rio de Janeiro. The convention lays down the rights of traditional communities over their intellectual properties. So why do you worry?

Dr. Suman Sahai: We need a national law that protects the intellectual property rights of traditional communities. "Gene Campaign" has already sent its proposals to the government. I can imagine a pharmaceutical company paying 1 to 5 percent of its sale revenue to the patent-holder, that is, the traditional community. This money shall be put into a development fund which must be solely governed by the community itself. The worst option would be to pay development aid to the government because it has not contributed anything. Intellectual property rights exclusively belong to the communities which have nurtured the knowledge through generations.

(Continued on next page)

Question: The patenting of life forms has only become necessary because of the scientific progress in biotechnologies. How can India participate in these new developments?

Dr. Suman Sahai: Biotechnology will dominate the world's economy in the next 20 or 30 years. Its raw materials are genetic resources. Biotechnology is not capital-intensive, but labour intensive. That's why India's prospects are very bright indeed: We have a large number of qualified technicians, who are very cost-effective by international standards; we still have an enormous biological diversity which is bigger than those of many industrialised countries taken together; and India is one of the leading actors in agricultural research in the world. So for the first time we have a real chance of a technological breakthrough which could probably enable us to get rid of poverty and underdevelopment. But GATT could prevent us from realising our chances because, due to the new patent-rules, we have to compete with multinational companies who are able to spend five times more money on research than the Indian government. Is that fair?

preparations to cultivate raw materials and also advise them in this endeavour. In addition, it provides assistance to other NGOs in the protection of existing stocks and is thereby trying to involve the public in the conservation of biological diversity.

9

Mismanaging Energy

New Delhi, the Indian capital has two faces. Alleys lined with trees and imposing government buildings remind one that this city was designed by British town planners. Beyond the modern shopping centre at Connaught Place lies the oriental bazaar of the old Mughal city of Delhi.

Pic 18: *Air pollution in Indian cities has reached catastrophic proportions. Many inhabitants are suffering from ailments of the respiratory system. Here too, the main culprit is motorised traffic.*

Pollutants in the Air—German and Indian Cities in comparison

	Berlin	Munich	Delhi	Calcutta
SO_2	23	11	26	108
NO_2	45	48	49	183
Suspended particles	41	43	421	1325

Monthly average of different pollutants measured in January 1994, all figures in micrograms per cubic meter of air

Sources: Delhi & Calcutta: *India Today* 15-5-1994; Berlin: *The Senator for Environment*, 27-5-1994; Munich: Bavarian State Board for Environmental Protection, 27-5-1994

I climb into one of the three-wheeler autorickshaws that shuttle between Connaught Place and the Red Fort. The traffic surges through the narrow roads in a deafening chaos of blaring horns, rattling exhaust pipes and screaming tonga-drivers. We come to a halt at a traffic light next to a rattly old truck. The driver has to keep the decrepit engine running by periodically stepping on the accelerator. The exhaust pipe blows hot, black exhaust gas directly into the open taxi. The passengers gasp for air. I want to flee; look around, but there is no escape. I'm surrounded by a horde of stinking steel bodies. When I later ascend the minaret of a huge mosque, I realise that nobody in the city can escape this smog: a pall of dust and smoke covers the sea of houses, so thick, that I can barely recognise the tall buildings in Connaught Place just a kilometre away.

The WHO counts New Delhi among the ten most polluted cities of the world. In the slums, children grow up with chronic asthma and bronchitis. The situation in Calcutta is said to be even more grim, with 11,516 large and small factories, 525,000 vehicles and millions of coal ovens polluting the air (*see table*). The powers-that-be in politics and business have remained unconcerned as India's large cities slowly turn into life-threatening gas chambers. And this is only a single aspect of the country's unbalanced energy policy.

India in a global greenhouse

If the prognosis, that the sea level would rise by one metre by the year 2100 due to the artificial warming of the earth's atmosphere were to come true, then the future for South Asia looks quite bleak. The Maldive islands would be submerged completely, floods would render large areas of Bangladesh unfit for inhabitation. India would lose 5700 km2 of coastal land, which is presently inhabited by 7.1 million people. A study by an American environment agency warns India of severe losses in agricultural yields. For instance, wheat yield would decline by ten to twenty percent. Ironically, it is the rich industrialised countries that are largely responsible for global warming.

During the UN Conference on Environment and Development in 1992 in Rio de Janeiro, the world's leaders agreed on a convention to protect the earth's atmosphere. It came into effect on March 21, 1994 after being ratified by 55 nations, among them India and Germany. Therein industrialised countries promise to reduce their harmful emissions by the year 2000 to 1990 levels and to make financial contributions towards measures to protect the atmosphere in the less developed countries. The contracting states have only committed themselves to prepare annual reports on their pollutant emissions and on the measures implemented to reduce them. Further concrete steps are to be negotiated during annual conferences involving all contracting states.

The privately run World Resources Institute in Washington places India fifth amongst the largest producers of greenhouse gases. Apart from motorised traffic and thermal power stations, it also holds deforestation (CO_2), wet rice cultivation and animal husbandry (methane) responsible for the calculated emission of 873 million tonnes of hydrocarbon-equivalents per year. This calculation has come in for sharp criticism from Indian environmentalists: they say that of all countries, USA, the biggest culprit (2365 million tonnes of hydrocarbon equivalent) is trying to hold the Third World nations jointly responsible for this climatic problem. In a counter-argument, Anil Aggarwal and Sunita Narain of the Centre for Science & Environment (CSE) in New Delhi, accuse their American colleagues of having undervalued the capacities of natural gas sinks—forests, water and

soil—that absorb greenhouse gases, and also of not having acknowledged the size of the population. Anil Aggarwal: "For the last 100 years, countries such as Germany have been discharging huge amounts of CO_2 into the atmosphere, which is now leading to a warming of the earth's atmosphere—to the greenhouse effect. If this is to soon result in a third of Bangladesh disappearing into the ocean, then you bloody well ought to share your prosperity with us. But instead you say: Bangladesh should plant a little less rice. India should not have so many cows and we on our part will drive our cars a little less. This is something that I refuse to accept!"

The study by CSE builds up another equation: a certain quantity of greenhouse gases can be produced without being accumulated in the atmosphere, because natural sinks absorb these gases. Distributed among the number of earth's inhabitants, this naturally-acceptable quantity of greenhouse gases gives each human being a quota of "pollution rights". Calculated in such a manner, this limit value can also be assigned to countries by multiplying it with the number of inhabitants. India lies way below this limit, whereas the industrialised countries exceed it substantially. Aggarwal therefore recommends an international trade in emission rights: "America and Germany also pollute our atmosphere. We therefore have the right to demand compensation. But I don't think we are going to get any further with additional development aid and a little technology transfer. We have the right to demand money, not because we want money, but because money is the best way to force someone into efficiency in today's global economic system. When your companies start being forced to pay for their emission of CO_2, they would definitely find ways and means to reduce it. At the same time, the money would encourage the developing countries to maintain their low levels of emission for as long as possible."

According to World Bank figures, the per capita consumption of commercial energy (oil, petrol, electricity) in India in 1988 stood at 211 kg of oil units, in West Germany at 4421 kg and in USA at 7655 kg of oil units. If China and India alone were to raise their per capita emission of greenhouse gases to that of Western Europe, the world-wide emission of these gases would rise by 68%. India thus deserves praise for its contribution in limiting the greenhouse effect. The reason: more than half the

population uses traditional, renewable sources of energy, and that too in small quantities; but those in power in politics and business are on the verge of gambling away this advantage.

Unbalanced energy policies

It is hard to imagine a more horrifying place on earth than Singrauli. In the north-eastern part of Madhya Pradesh, man has gouged out craters in the earth and has created an industrial inferno without parallel. Many describe it as India's energy capital. The "development" of the region began with the construction of the Rihand Dam, which submerged nearly 50,000 hectares of land in the early sixties. A little later, coal reserves were discovered there and mammoth open cast mines were started. In the seventies, construction commenced on five huge thermal power plants with a total capacity of 7000 megawatts, which burn ninety percent of the coal extracted there and are cooled with water from the dam's reservoir.

Just thirty years ago, Singrauli was a remote region on the southern edge of the Gangetic plains, whose inhabitants, mostly Adivasis, lived on subsistence agriculture. The Rihand Dam alone claimed the land of 200,000 people; many of them were repeatedly displaced by the other projects that came later, some of them as many as six times. Most of them are today forced to toil as daily wagers in ramshackle settlements that have been newly constructed. The unemployment rate is 25%, sanitation facilities are inadequate, health care is miserable. Many settlements don't even have electricity. No trees, only electricity poles tower here in the sky—the coal mines have devoured almost all the forests. Thanks to a policy of using high chimneys, air pollution here is still within official limits. Yet, ground water and even the reservoir are contaminated with mercury, cadmium, arsenic and other toxins. Not a single well provides drinking water conforming to official norms of potability. The major pollutants are the power plants, which every year pump six million tonnes of ash, liquefied with water, into massive sedimentation basins.

Even today, many experts measure a country's development status on the basis of per capita consumption of commercial energy. The Indian government spends billions to subsidise electricity consumption in private households and agriculture. Electricity failures are a routine occurrence in India, because the

chronic shortfall forces Electricity Boards to disconnect entire grids on a reciprocal basis. The construction of new power plants thus enjoys the highest priority with all governments. As a result we have monstrous projects like the dams on the Narmada River or the coal-deserts of Singrauli. Thermal and gas power plants produce 65 percent of electrical energy, large dams around 25 percent and nuclear power plants nearly two percent.

Nowhere else is the widening gap between city and village, between modernity and tradition, so blatantly visible as in energy management. Only wealthy households can afford an electricity connection. Irrigation pumps are used mainly by large and medium farmers. Till today, entire villages are waiting for electricity. While the countryside has to bear the brunt (Singrauli is a good example), it is the cities that profit, consuming eighty percent of the electricity generated. The long transmission routes result in electricity losses of around twenty percent. Till date, state monopoly—just recently broken due to the advent of liberalisation—does not allow effective management. Hardly any power plant can exploit its installed capacity. Cheap electricity rates encourage wastage among consumers.

This notwithstanding, there are still enormous reserves in India's power supply. Economic auditors of the World Bank calculated that better utilisation of existing plants and economical use (energy-saving lamps, improved irrigation pumps) could help save up to twenty percent of the planned power plant constructions. Economy measures would not only spare the environment, they would also lessen the burden on the state exchequer. However, reasoning with powerful economic interests appears to be useless: "Mega-projects are implemented because planning ministries and public enterprises have grown with such installations," says Smitu Kothari, an environmentalist. "They have to continue in order to survive. This policy is also supported by certain business people and leading bureaucrats who rake in huge profits during the implementation of mega-projects. One can safely assume that bribes amount to twenty percent of the project costs."

Also, one can't overlook the dominant role played by the World Bank in the development of India's energy sector. Till 1992, it had given credits worth a total of $8.6 billion for 56 large projects. In the spring of 1993, it sanctioned another $400 million for the construction of new thermal power plants in

Singrauli and other places. The World Bank thus accounts for one fifth of all energy investments planned in the eighth Five Year Plan (1990-1995). As a result, it can also influence technology (coal and gas) and the development strategy (central mega-projects). The one-sided orientation of India's energy sector on centrally-implemented mega-projects also reflects the export interests of industrialised countries—whose writ runs large in the World Bank—because only in the case of mega-projects is India dependent on foreign turbine—and generator technology.

Although World Bank experts have exposed the weaknesses of the Indian energy sector in numerous studies, the management of the Bank and its Directorate are loath to deviate from the tried and tested paths. Indian agencies and international environmental protection groups have sharply criticised the mega-projects of Narmada and Singrauli. They hold the World Bank jointly responsible for the misery of the local population and for the environmental damage caused by these projects.

Even Germany is active in the Indian energy market. Politicians in Bonn lay stress on co-operation with India in this field. In the year 1991, out of DM685 million development aid to India, DM180 million went towards energy projects. In the lignite power plant of Neyveli in Tamil Nadu—a more modest version of the Singrauli complex—DM275 million came from Bonn's tax revenues and even Singrauli received DM171 million. The company Siemens is associated with the government-owned power plant manufacturer B.H.E.L. (Bharat Heavy Electricals Ltd.) through long-term co-operation agreements. During a state visit by the German Chancellor Helmut Kohl to New Delhi in February 1992, a German consortium led by Siemens signed contracts for the construction of two large power plants in Maharashtra and Tamil Nadu. Investment amount: a total of DM50 billion.

The Indian government plans to add 26,000 MW to the installed capacity by 1997. The planning authorities estimate that this will result in a two-fold increase in the consumption of coal and natural gas by the year 2005. The Environmental Defence Fund in Washington, which is critical of the World Bank, calculates that the planned expansion of Indian thermal power plants in the next ten years alone would burden the earth's atmosphere with an additional 125 million cubic metres of CO_2.

Energy without greenhouse gases

India's farmers maintain around 84 million working animals—oxen, water buffaloes, horses, camels, donkeys, elephants and yaks. If one were to assign each of them with a value of half horsepower, then the result is a "capacity of animal labour" of 30,000 megawatts, which corresponds to almost the entire capacity of all power plants in India. Without this contribution of animal power, India would have to, for instance, import extra mineral oil worth Rs. 40 billion (around 2 billion DM). In the financial year 1992–93, India's oil import bill stood at Rs. 160 billion.

Even today, half of the energy generated in the rural areas is based on renewable sources: sun and wind, water, working animals, agricultural waste, firewood. The operation of 20 million bullock carts feeds at least an equal number of families. These wooden carts, with their large wheels, are more economical than any truck over short distances of a few kilometres and are moreover absolutely all-terrain. Red chillies and other farm products are dried in the sun on a thin layer of sand that has

Pic 19: *Farmer families undertaking a pilgrimage. Despite the existence of aeroplanes, railways and trucks, beasts of burden account for nearly half of all transportation in India even today.*

THE END OF THE AGE OF FOSSIL FUELS
INTERVIEW WITH SHRI S. KRISHNA KUMAR
(Minister of State for Non-Conventional Energy Sources)

Question: What was the government's intention in creating a separate ministry for non-conventional energy sources?

S. Krishna Kumar: ...Prime Minister Shri Narasimha Rao is personally interested in the development of renewable energy sources in India. After all, our country has a huge potential in that. Secondly, the expansion of conventional energy sectors is facing huge problems: our reserves of mineral oil and gas will be exhausted within 30 or 40 years, coal will last us perhaps another 150 years. Our oil imports require huge amounts of foreign exchange. Big dams are afflicted with problems in resettlement of people and the destruction of valuable forests. A number of them face protests.

I believe that the age of fossil fuels is coming to an end. The era of renewable energy sources has already begun. India wants to participate in this global trend by developing new technologies.

Question: Where and how do you experience hurdles in executing your task?

S. Krishna Kumar: As you know, many of these new technologies require high investments. It's here that we have to ensure better chances for them in relation to conventional energy generation which is supported by many hidden subsidies. For instance, we are pointing to the high transmission losses and environmental losses which are not included in the cost of energy supply. A political redirection is necessary in this regard. For instance I am proposing a carbon-tax and fixing of a quota for non-conventional energy generation by law. Of course these ideas are resisted by vested interests who have prospered within the old system. But we would like to convince the public as well as politicians of our cause. We have to harmonise and restructure political guidelines and we have to create a market for our products.

Question: Your ministry spends a lot of money to subsidise renewable energy sources. Are your technologies not competitive?

S. Krishna Kumar: Subsidies are indispensable if you as a government agency want to popularise new technologies. But our aim is to create a new market so that these new devices become economically viable and subsidies can be withdrawn step by step. We have already done away with subsidies in the solar-thermal and wind energy programmes.

been spread on the fields. All over India, women separate the chaff from the grain using wind power—letting the wind clean the grain while winnowing. In hilly areas, water mills are constructed on streams and rivers to grind grain, turn wood, press oil. No doubt the burning of firewood and farm waste also releases greenhouse gases, but not more than what natural sinks are capable of absorbing.

In light of the imminent climatic warming, there is a growing interest even in India for renewable sources of energy. In 1993, then Prime Minister, Narasimha Rao, elevated the Department for Non-Conventional Energy Sources into a full-fledged ministry (MNES), headed by him personally. Mr. S. Krishna Kumar handles affairs as the Minister of State (*see box*). He tells us proudly that his Ministry has built an electricity generation capacity of 200 to 300 MW in the last few years.

The Ministry promotes the use of wind power installations, small water turbines and photovoltaic cells for generating electricity. Its officials distribute "improved chulas" that consume less firewood. The efficiency of camel carts and bullock carts is being improved by incorporating rubber tyres and ball-bearings. Biogas plants and firewood plantations are expected to reduce the pressure on forests. For demonstration purposes, the Ministry maintains 174 battery-operated cars and five cars that run on alcohol. It also supports research and projects in hi-tech areas such as geothermal energy, wave energy, and tidal power plants.

Even so, the financial set-up of this experiment, which is perhaps the only one of its kind world-wide, speaks volumes. In the eighth Five Year Plan, the government allocated Rs. 640 billion for the energy sector, but the MNES is allowed to spend just about one percent of this amount (Rs. 8.5 billion). This notwithstanding, Minister of State Krishna Kumar is striving for an installed capacity of 2000 MW by 1995. The new gas-coal power plant at Dabhol, that is being constructed by American companies in Maharashtra and is being waved about as proof of the success of liberalisation, is expected to similarly generate 2000 MW. Its price however is Rs. 90 billion, payable in US dollars!

Despite the sparse financial cover, India has made notable advances in the field of renewable energy sources. In the coastal states of Tamil Nadu and Gujarat, wind energy parks are mush-

rooming all over the place. Private enterprises are receiving low-interest credits and tax reliefs for such investments. There are now around 80,000 bio-gas plants in India, a number exceeded only by China. The initial hope that bio-gas would be able to free the poor from collection of firewood did not materialise, because even small units require at least two head of cattle. Even the improved chulas, of which the Ministry distributes around 1.5 million every year, are not proving to be popular. Many housewives discarded them after a short while because they make cooking more difficult. A prime example of a well-intended, but failed, effort is the solar cooker which despite generous subsides is prohibitively expensive for most rural families and moreover entails a change in their lifestyle, which is thousands of years old. After all, the sun does not shine early in the morning and late in the evening, which is when women have the time to prepare meals!

Once again, the horse has been put before the cart. One could have gained knowledge of traditional energy sources and refined indigenous techniques with the help of modern technology. Instead, the government acquires new technologies from abroad and then tries to make them acceptable to people at home. Even so, India now manufactures windmills and small hydro-electric plants, solar heaters and solar panels as also bio-gas plants of different sizes indigenously. The World Bank, the government of Germany and other countries are supporting this programme with loans and professional advice. In this manner, all concerned parties can claim their involvement in saving the world's atmosphere. The fact that the money invested here is only a fraction of the millions that are earned by the construction of rapacious mega-power plants, is concealed deliberately.

10

We are the People!

Money, power and violence

Shortly before his assassination, Mahatma Gandhi pleaded for the dissolution of the Indian National Congress because he felt it had achieved its goal. He advised members of the organisation to go to the villages and assist the villagers in starting a life of dignity. Yet, most of the other leaders of the freedom struggle expanded their organisation into the governing party, be it from a sense of responsibility or from a lust for power. Except for a few short interruptions, the Congress party has dominated Indian politics right from independence. The party does not have any clear-cut ideology. It represents a collective movement, in which socialists and conservatives, populists and opportunists find a political habitat. For decades it was led by the Nehru-Gandhi clan, which jealously guarded itself against any threat to its dominance. Till today, a small coterie, loyal to the party President and Prime Minister, decide on policy guidelines and on nominations of candidates for elections. Meanwhile, other Indian parties have virtually dispensed with inner-party democracy.

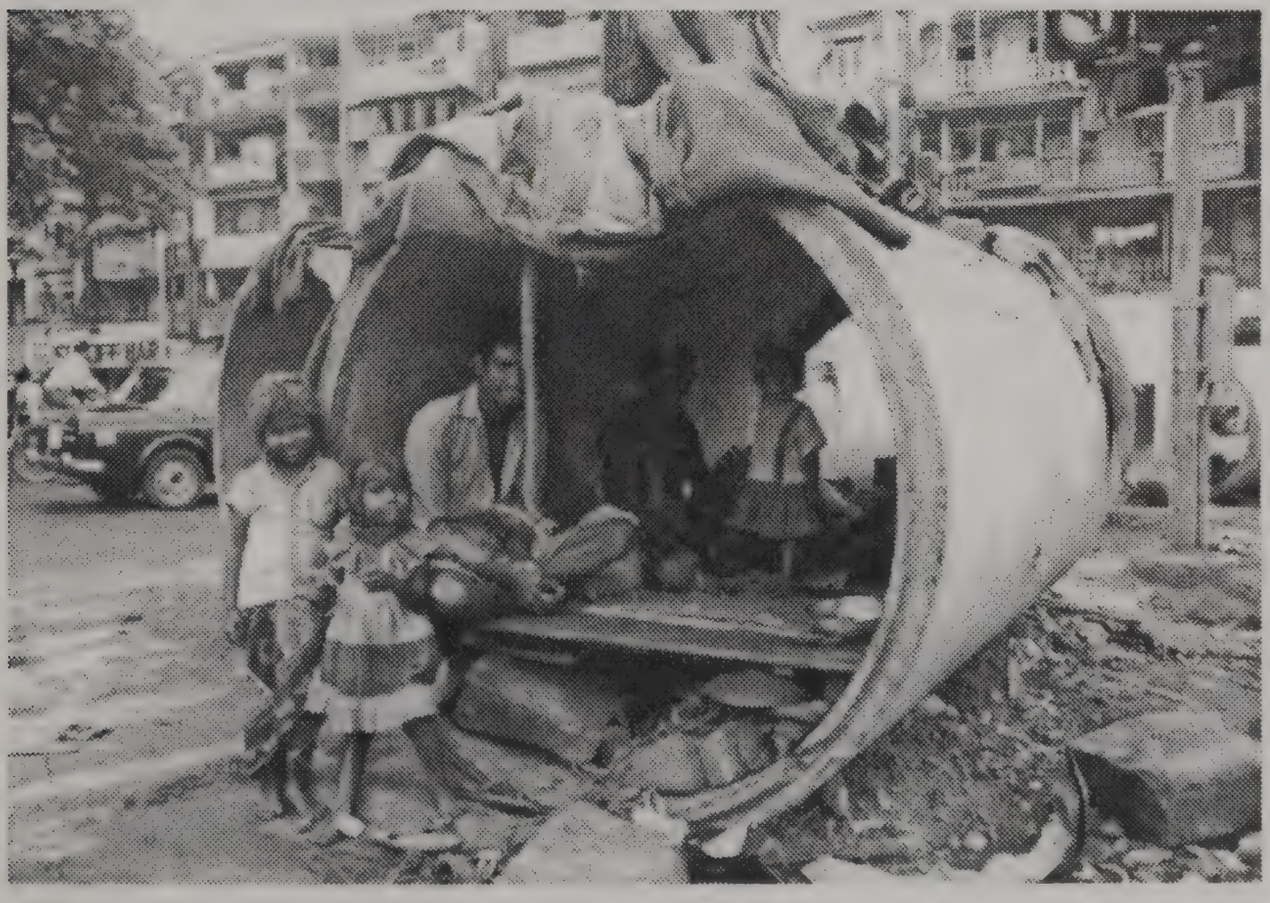
India's constitution is modelled on the British system of democracy. Its essential characteristics are the direct majority voting system and the strong role of the Central Government. India's Union States enjoy much less decision-making powers than say, the German Federal States. The majority voting system makes it particularly difficult for smaller parties to enter the parliament. In effect, the political system has become so rigid, that today money and violence, opportunism and sycophancy are the rule of the day.

"India is the world's largest democracy only in a statistical sense," says Prof. Rajni Kothari, political scientist at the University of Delhi. "Modern capitalistic and feudalistic elements dominate the power structures. After Nehru's death, mafia-influences have become very powerful in the Congress party. They no doubt bring money for the party's treasury, but they also exercise control. Many members of parliament have unleashed a terror-regime in their constituencies with the help of hired thugs, and combat each popular movement that threatens their might. Corruption, once limited to the lower clerical cadre, has now become an affair of the high and mighty. The actual flow of money doesn't take place before the election, but rather after it, when industrialists use money to twist the government around their fingers." On the whole, the political culture hardly allows any room for dissent. Alternative stimuli to build political will is forced to use other fora—lobbies and citizens' action committees, to name a few.

Under the world-wide dictate of Western industrial culture, the concept of "development" has become dogma. Many Indian politicians worship this concept like a fetish. Most of them have the highly industrialised societies of the West in mind, which they believe should be emulated, come what may. With fresh programmes costing millions, the government promotes "progressive" production techniques in agriculture and industry to combat poverty and illiteracy. But as costly as a development programme drafted on a cluttered table in New Delhi may be, it can never do justice to the country's cultural and economic diversity. The inertia of a bloated bureaucracy invites corruption and favouritism. The unending rural-urban migration proves that the living conditions of the poor have hardly improved despite governmental programmes; and that too despite the fact that Parliament and government have initiated numerous laws to protect the underprivileged sectors of society, and which in any international context may be viewed as progressive. Many analysts attribute the failure of developmental programmes to the citizen's lack of confidence in the state. It is especially the poor who are likely to regard the state as a confederation of exploiters, or even as a brutal oppressor, rather than as a benefactor.

Even earnest attempts to weed out the economic evil and create more jobs have become bogged down in a tangle of vested

interests. In 1990, when the Congress party was consigned for a short while to the Opposition, the national Planning Commission, under the chairmanship of the reformist Prime Minister, V.P. Singh, tried to promote Mahatma Gandhi's ideas: in the newly formulated eighth Five Year Plan, the implementation of agricultural programmes was to be transferred to village councils; dry farming was to be supported in place of the Green Revolution, labour-intensive small-scale units in handicrafts and industry were to receive more tax reliefs and were to be better protected against the competition posed by big industry. But industrialists and large landowners, leading bureaucrats and departmental ministers opposed this idea vigorously. In the subsequent discussions, the reform was almost diluted into oblivion. Shortly thereafter, the new Prime Minister, Narasimha Rao, announced the liberalisation of the economy and India was back to square one.



Pic 20: *Millions of people live on the roads in India's large cities. The city administrations employ clearing commandos to keep the traffic paths "clean". Citizens' action committees are trying to help the homeless get their right to living space within the framework of existing laws.*

Gandhi's legacy

The victims of the official doctrine of development are increasingly refusing to keep quiet. In many parts of the country, Adivasis, peasants, slum-dwellers are rising in rebellion. Intellectuals are organising their protests and are conveying them to the cities via the media. These movements are finding a socially acceptable political instrument in Mahatma Gandhi's non-violent protest methods. The cultural and material heritage of the country points to ways of development that are less cynical. With great patience and a zeal to experiment, rural development agencies and environmentalists are working to resurrect traditional solutions and trying to adapt them to modern scenarios. In this manner they are developing an alternative model of development which the eloquent Medha Patkar, leading organiser of the Narmada Bachao Andolan, describes as follows:

"Our cause is for a just and sustainable development. Therefore we have to shape relations between man and nature and within humankind free of exploitation. We shall try to attain a non-consumerist lifestyle not only in the wealthy countries of the North but also amongst the elites in the South.

"Our vision is a society promoting simplicity and serenity, pursuing human rights and justice, fighting exploitation. During my work I have found that the seed of this society exists even today in whatever form in the tribal communities. We shall not destroy them, perhaps one day we can learn a lot from them."

The Indian citizens' movement consists of three heterogeneous actors: social action groups, citizens' action committees and networks. They reinforce each other mutually in the struggle for a democratic, socially just and ecologically acceptable path of development. They urge that the rural population be given back its collective right to exploit natural resources. The affected parties should have a right to co-determination during the planning and execution of large development projects. The political and economic decision-making structures should be decentralised, the priority of private profits above environmental protection should be reversed. Most of the action groups and citizens' action committees intentionally keep away from party politics. They feel committed to another culture of resistance, whose roots lie in the anticolonial freedom struggle. Their ideas

are anti-capitalist, grass-root democratic, women-oriented, holistic-ecological.

After the suppression of the Maoist-Naxalite movement in the seventies, students and intellectuals, who hoped for social change, went into rural areas for practical field work. They provided the poor with medical care and accompanied them during visits to authorities so that the poor could exercise their rights and make use of state assistance. Even as a relationship of confidence slowly developed between the two unequal partners, evening schools were set up to make the villagers aware of the reasons for their misery. The urbanites helped them to successfully overcome conflicts with landowners, factory-owners and money-lenders. Social action groups all over the country are estimated to number several thousand. The Vivekananda Girijana Kalyana Kendra in Karnataka (medicine), Academy of Development Sciences in Karjat near Mumbai (agriculture) and the village of Ralegan Siddhi (water) guided by Anna Hazare, have been mentioned here by way of example.

Civil rights activists like Medha Patkar and Baba Amte have sacrificed their private life to assist marginalised sections of the population to assert their human rights. They organise marches and blockades, appeal to the public through the press and petition courts so that even illiterates are able to obtain their rights. The Narmada Bachao Andolan, the protectors of forests, Chipko Andolan, and the movement for a separate Adivasi state known as Jharkhand in southern Bihar have been mentioned here by way of example as well.

Ever since he was a child, 80-year old Baba Amte felt attracted to the ideals of Mahatma Gandhi. He devoted over forty years of his life to build a rehabilitation centre for leprosy patients in Warora, Maharashtra. Distinctions such as the Magsaysay Award and the American Templeton Prize honour his achievements. When he learnt of the hardships being faced by the population in the Narmada valley, Baba Amte decided to entrust his life's work to his sons and to settle down in a small cottage on the bank of the Narmada. Trusting his own popularity, he explains: "I am old and can't even sit anymore. But nobody will dare to close the sluices of the dam as long as I am here. Many people come to visit me, I convey to them the confidence of fighting for a just cause and that is why we will win!"

Scientists, journalists, lawyers, doctors, who sympathise with the grievances of the rural population, have established networks and resource banks to provide organisational and scientific assistance. They provide the press with information in the metropolises of New Delhi and Mumbai, prepare petitions for courts and try to influence politicians. Examples: Lokayan, a group initiated by Prof. Rajni Kothari, supports social action groups with scientific expertise and legal aid. The Indian People's Tribunal on Environment and Human Rights employs retired judges to investigate human rights infringements in order to impart respectability and publicity to the concerns of people's movements. The Centre for Science and Environment regards itself as a scientific resource pool for action groups and is responsible for a large part of the country's eco-political publications.

Activists often make great personal sacrifices. They forego family life, regular income, leisure and old-age care, because only in this manner can they gain the trust of the poor. However, many of them derive a great deal of personal satisfaction from their work. "I always get angry when other people describe me as a do-gooder," says the University graduate Celine D'Cruz amusedly. Celine supports slum-dwellers in Mumbai as a member of the Society for Promotion of Area Resource Centres (SPARK). "I have a lot of fun with these people, I enjoy the work. I don't do anybody a favour, I am not sacrificing myself, rather I'm enjoying myself every minute!"

According to Prof. Rajni Kothari, in Indian society, social action groups, citizens' action committees and networks represent the original source of democratic dissent. He wants such dissent to have a greater influence on national politics: "Grassroot groups highlight social inequities; they perform a function that should actually be fulfilled by the political opposition. All the same, the big question is how they can become effective on a national level. However, there is definitely a great need for wider links in these circles."

The vast number of groups, the multiplicity of their fields and the distances within the country and between cultures stand in the way of an alliance of this extra-parliamentary opposition. Sometimes, egoistic vanities of leading personalities also prevent co-operation. No one can claim for sure that all groups are free of corruption or that they work independent of vested interests.

But the greatest weakness of the Indian grass-root movements lies in the target audience's lack of co-determination in the management of the organisation. In this case, the huge divide in the level of education, which separates the organisers from those being organised, has a negative effect. Only few groups undertake serious efforts to cultivate managers within the target group by providing training and by enabling practical participation in the work being done by the organisation.

The relationship between grass-root groups and the government was, and is, loaded with tension and marked by mutual distrust. Though most of the social action groups use public funds for concrete developmental programmes, they often realise that the authorities are on the side of large landowners, local politicians and entrepreneurs who are responsible for the plight of many rural people in the first place. Citizens' action committees and the government often find themselves on opposite sides of the fence, e.g., in the Narmada Project. In the past, the government has repeatedly attempted to weaken, or even silence, citizens' groups by using bureaucratic controls and the police. Prof. Rajni Kothari's advice is to forge ahead: "The groups have to become more political, they have to assume a central role in politics to avoid becoming corrupt or getting eliminated."

Nevertheless, the government has begun attempts to initiate a dialogue with the voluntary sector. On the 7th and 8th of March 1994, then Prime Minister, Narasimha Rao and leading cabinet members, together with representatives of social action groups, discussed the possibilities of co-operation in combating poverty. "The role of NGOs lies in the realisation of development and change," said the Prime Minister. "We don't want to become stooges of the government," countered an NGO-representative. The results of these consultations, held for the first time in this form, was a list of fourteen areas of activity in which co-operation was considered possible—among them health, education and environmental protection. By extending an invitation the government has admitted that grass-root groups are best qualified for the execution of target group-oriented development programmes because of their close links with the population.

The successes of Indian people's movements mostly go unnoticed, failures are seldom made public. Social action groups have helped countless villagers acquire the right to farmland,

have helped them find new sources of income; all this without making newspaper headlines. Many a destructive mega-project (Silent Valley and Koel Karo Dams) were abandoned due to opposition by the affected people. People such as Medha Patkar, Anil Aggarwal and many others have, through their dedicated work, amassed a wealth of knowledge that is of great importance for the future of this country. Yet, many observers ask themselves whether the new gigantic infrastructure and industrial projects with foreign equity participation, now being encouraged by the economy's liberalisation, will not crush the numerous small citizens' groups. Bittu Sahgal, publisher of the nature conservation magazine *Sanctuary* and spokesman for the Indian People's Tribunal on Environment and Human Rights, is optimistic: "The number of people who profit from mega-projects is becoming smaller every day. The consequences of an extravagant life-style of the elite are becoming increasingly widespread

ANCIENT KNOWLEDGE REDISCOVERED! FIRST SCIENTIFIC CONGRESS ON TRADITIONAL TECHNOLOGIES

In December 1993 the first "Congress on Traditional Sciences and Technologies in India" took place in Bombay with the participation of more than 1200 scientists and citizen's groups. One of the most reputed research institution of the country, the Indian Institute of Technology organised the conference in collaboration with the Madras-based "Patriotic and People Oriented Science and Technology Foundation." It was financed by government grants and sponsorships from private companies. The author visited one of its coordinators, chemical engineer Dr. H.S. Shankar at IIT Bombay on April 6, 1994.

Question: What was the aim of the congress?

Dr. Shankar: We wanted to discuss and prove the relevance of traditional knowledge for India's present problems. Only if you have a clearly defined goal can you choose between several technologies available. If we would like, for instance, to strengthen the self-reliance of rural communities, then traditional ways of production become very important.

Question: What do you think might have motivated even large private corporations to support the congress?

Dr. Shankar: It is common knowledge that the strength of a society rests in its own resources. The question is, how to use these resources. The

(Continued on next page)

and will bring the affected people against it. The question arises whether we will have a dictatorship when the elite becomes militant, or whether we will have to change our lifestyle under pressure from the masses." A scenario which is also applicable to the relationship between the nations in the South and those in the North of our globe.

Co-operation between South and North

After the end of the cold war, the term "Third World" finally lost its relevance. Even the keyword "development," which the American President Harry S. Truman coined in his speech upon assuming office, lacks definition. "The era of developmental politics is nearing its end, because its four basic principles are no longer valid", writes the scientist Wolfgang Sachs from the Wuppertal Institute for Climate, Environment and Energy. First of all, the industrialised countries of the North can no longer

government and many private companies have an interest to understand, they want to learn how to harness local traditions and resources.

Question: Please summarise the outcome of the congress. What is the relevance of traditional technologies in India today?

Dr. Shankar: Only by well-founded documentation can we eradicate doubts about their relevance. We are just at the beginning, much more research is necessary before we can give definite answers. But during the deliberations it became quite clear that traditional agriculture and water management might be our most hopeful answer to the problem of food-security. Even traditional healing practices have a huge potential. They could provide for 80 to 90 percent of public health services, on the condition that massive efforts for the conservation of natural resources are undertaken.

Question: Which are the hurdles for a further development and commercialisation of traditional technologies?

Dr. Shankar: The main problem is that these products are more costly than mass products from industries. If we could, for instance, through taxation achieve a break-even point, then traditional products could become competitive. In agriculture traditional methods have proven more cost-effective than modern technologies. But whether natural farming can satisfy the growing demand in food is still to be established. So far we have hardly any data about its yield-potential.

claim to represent the model of world-wide development because there is no doubt that "they are leading a global race to disaster." Secondly, the political pressure that led to the introduction of developmental aid as a weapon in the conflict between capitalism and communism no longer exists. "The goal of developmental politics is now no longer progress, rather it is damage limitation to check waves of migrations, control regional wars, combat black-market trade and prevent the most serious environmental catastrophes." Thirdly, the project to "lead people from tradition into modernity", has failed because today nobody believes in the illusion that the South will catch up. And fourthly, the "suspicion that developmental politics is basically questionable" is getting stronger. The "hidden plan for the Westernisation of the world" is leading to a loss of diversity and is exterminating every other life-form "which represents a living alternative to the growth-oriented industrialised society".

As opposed to Chancellor Helmut Kohl's promise during the UNCED-Conference in 1992 in Rio de Janeiro to raise the share of developmental aid in the German GDP to 0.7%, the quantum of aid to the developing countries has since declined in real terms. The competent Federal Ministry, BMZE, is trying to compensate for this fact with qualitative improvements and a shift in focus to poverty alleviation and environmental protection. Changes are taking place even in the private sphere of developmental co-operation. Many German aid agencies have established branches in India to relieve themselves of administrative work, and also to enable greater co-determination and greater accessibility for the target groups.

The true success of the mammoth conference at Rio will probably lie in the intensification of exchange among NGOs from the North and the South. At the same time, many NGOs in the North that are active in environmental protection have learnt to think globally and to integrate the interests of people in the developing countries into their work. Only when expanded by the perspective of countries such as India does the entire insanity of the rapacious life-style in Germany and other industrialised countries become apparent. The new alliance has achieved remarkable success in the past few years. For example, the Narmada Bachao Andolan found allies in all major industrialised countries, who mobilised public opinion and pressurised local gov-

ernments that have considerable influence on the policies of the World Bank. After government representatives from Washington, Tokyo, Bonn and other European capitals had taken a critical stand against the project, the World Bank was compelled to withdraw from it.

The South Asian Coalition on Child Servitude turned to Christian aid agencies in Germany with a request that they make buyers of carpets made in India, Pakistan and Nepal aware of the fact that the resplendent masterpieces are often manufactured through the exploitation of children. After intensive public work and tedious negotiations with governmental representatives, with carpet dealers and manufacturers, this alliance of various German development agencies and their Indian friends was able to promote a new label: "Rugmark – Manufactured without child labour". Many Indian producers have expressed their readiness to do away with child labour and to allow their facilities to be inspected by citizens' actions committees, so that their products can be marked with this new seal of international approval.

These are concrete improvements for thousands of underprivileged people in India, certainly. But they could be implemented only by employing the disparities in the world economy. Rich carpet buyers threatened to boycott anti-children products. The mighty World Bank insisted on improvements in the rehabilitation measures for the displaced population and in the conservation of nature and until such time New Delhi had to forego dollar loans from Washington in order to save face.

The imbalance between Northern and Southern economies was never touched upon in either of these cases; it was not even questioned. Many grass-root groups in India are sceptical of its instrumentalisation, even for pushing through human rights or environmental protection measures. Anil Aggarwal: "I have to categorically reject the imposition of environmental conditions on trade relations or on the grant of developmental aid, because they are instruments of power that are available only to the industrialised nations. A world-wide eco-management, which all of us want after all, has to be supported by equal partners who can check each other reciprocally."

Pic 21: *Women and girls demonstrating against child labour. Although the employment of children in hazardous industrial units is prohibited by law, according to figures of NGOs around 50 million children work in small businesses, manufacture carpets, matches and glassware.*

Others find the situation so bleak that they clutch at every straw. The poorest of the poor—especially the Adivasis and the Dalits—who have been struggling in vain for decades against oppression and marginalisation, hope to get support from powerful industrialised countries. "If there were no international fora where we could present our demands, we would not have had a voice," stresses Prof. Ram Dayal Munda, one of the most prolific spokespersons of the Adivasis. "For us there is only one hope; that the international community exerts pressure on the Indian government." Prof. Munda recommends linking political conditions with developmental aid, not in a repressive manner but in a constructive manner—i.e., to reward and not punish.

I hope this book is able to promote co-operation between Indian and German citizens' action committees. However, a warning must be sounded here against blind activism, such as that demonstrated a few years ago in Malaysia, where young German environmentalists blocked ports exporting tropical wood. The Malaysian government took this opportunity to defame na-

tive environmentalists as foreign agents. Policemen ransacked their offices. Vandana Shiva recommends that activists restrict their campaigns to their own countries: "The environmentalists in the industrialised countries bear a responsibility towards their own society. They must also prevent environmental destruction in the South. It is legitimate to carry out campaigns in one's own country, and in doing so, express solidarity with grass-root movements in the South. But each step which restricts the maneuverability of the movements in the South is directed against environmental protection per se!"

Select Bibliography

1) Alternative Lifestyle

Rajan R. Malaviya, "Das Deutsche Indienbild", *Internationales Asienforum* Vol. 2, Weltforum Verlag, Köln 1971.

Pankaj Chattopadhyay, "Curry, Karma, Kranker Riese", *epd-entwicklungspolitik* No.4/91, Evangelischer Pressedienst, Frankfurt/Main, February 1991.

Survey by the author among students at the Max Mueller Bhavan, Pune on behalf of the Deutsche Stiftung für Internationale Entwicklung, Bad Honnef 1988.

Author's interview with student Naznin, Pune 27.2.88.

2) Wonderland

Hermann Kulke, Dietmar Rothermund, *Geschichte Indiens*, Verlag Kohlhammer, Stuttgart 1982.

Kautilya, *The Arthashastra*, Penguin Books India, New Delhi 1992.

Dharampal, *Indian Science and Technology in the Eighteenth Century*, Academy of Gandhian Studies, Hyderabad 1983.

Jakob Rösel, "Die Vorkoloniale Agrarordnung Indiens", *Blätter des Informationszentrums Dritte Welt* No.68, Freiburg 1978.

Catalogue of the Exhibition, *Chatur Disha*, Haus der Kulturen der Welt, Berlin 1991.

Author's interview with Winin Pereira, Mumbai 16.3.1994.

3) Economic Power

Raghavan Iyer, *The Essential Writings of Mahatma Gandhi*, Oxford University Press, New Delhi, 1993.

Rudrangshu Mukherjee, *The Penguin Gandhi Reader*, Penguin Books India, New Delhi, 1993.

Vandana Shiva, Jayanto Bandyopadhyay, "Umweltschutzgruppen und das herrschende Entwicklungsmodell", Jose Punamparambil (Ed.), *Umarme den Baum—Indische Ansichten zu Ökologie und Fortschritt*, Horlemann Verlag, Bad Honnef, 1990.

Dagmar Keiper, "Das Ziel: Globalisierung—Mehr Liberalität für Indiens Wirtschaft", *Das Parlament*, Bonn 19./26. February 1993.

Länderkurzbericht INDIEN, Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung, Bonn 1993.

Author's interview with German Federal Minister Carl-Dieter Spranger, Mumbai 12.2.1994.

4) Cultural Synthesis

Clemens Jürgenmeyer, "Ein endloser Zyklus von Entstehung und Auflösung", *Das Parlament*, Bonn 19./26. February 1993.

Hermann Kulke, "Regionen und Regionalkulturen in der Indischen Geschichte", Catalogue of the exhibition, "Die Anderen Götter", Rautenstrauch Joest-Museum, Köln 1993.

Vandana Shiva, *Das Geschlecht des Lebens—Frauen, Ökologie und Dritte Welt*, Rotbuch Verlag, Berlin 1989.

Kapila Vatsyayan, "Ecology and Indian Myth", in Geeti Sen (Ed.), *Indigenous Vision, Peoples of India—Attitudes to the Environment*, Sage Publications, New Delhi 1992.

Madhav Gadgil, "Soziale Barrieren gegen die Ausbeutung der Natur—die indische Erfahrung", in Jose Punnamparambil (Ed.), *Umarme den Baum...Indische Ansichten zu Ökologie und Fortschritt*, Horlemann Verlag, Bad Honnef, 1990.

Maneka Gandhi, *Brahma's Hair—The Mythology of Indian Plants*, Rupa & Co., Calcutta 1991.

Author's interview with Swami Agnivesh, New Delhi, 23.7.91.

5) Our Land, Our Life

Sigrist, Guha, Hauck, Marla, *Indien—Bauernkämpfe*, Verlag Klaus Wagenbach, Berlin 1976.

"Statistisches Bundesamt", Länderbericht Indien 1986, Verlag W. Kohlhammer, Mainz 1986.

Martin Khor, "500,000 Indian Farmers Rally against GATT and Patenting of Seeds", *Third World Resurgence* No.39, Third World Network, Penang November 1993.

Winin Pereira, *Tending the Earth—Traditional Sustainable Agriculture in India*, Earthcare Books, Mumbai 1993.

Vandana Shiva, *The Violence of the Green Revolution*, Other India Press, Mapusa, Goa 1991.

Ali Ansari, "Barefoot Doctors of the Land", quoted from: *Third World Resurgence* No.31, Third World Network, Penang, March, 1993.

Rimjhim Jain, S. Rajendran, "Minimum Interference, Maximum Yields", *Down to Earth*, Centre for Science and Environment, New Delhi 30.4.1994.

M.S. Swaminathan, "For a New Synthesis", *Frontline*, Chennai, 30.3.1994.

Rudolf Buntzel, "Viel mehr als Bio-Landbau", quoted from: *epd-entwicklungspolitik* No.1/94, Evangelischer Pressedienst, Frankfurt/Main, January 1994.

Author's interview with Winin Pereira, Mumbai 16.3.1994.

Author's interview with Darshan Shankar, Karjat 2.4.1994.

6) Water is Might

Bradford Morse et al., *Sardar Sarovar—The Report of the Independent Review*, Other India Press, Mapusa, Goa 1992.

Uma Shankari, Esha Shah, *Water Management Traditions in India*, PPST Foundation, Chennai, 1993.

Ganesh & Vasudha Pangare, *From Poverty to Plenty: The Story of Ralegan Siddhi*, Indian National Trust for Art and Cutural Heritage, New Delhi 1992.

Author's interview with Chaudia Banga, Katore 14.6.1990.

Author's interview with Medha Patkar, Bonn 4.12.1991.

Author's interview with Anna Hazare, Ralegan Siddhi 31.3.1993.

7) Who Owns the Forest?

The State of India's Environment 1984-85, Centre for Science and Environment, New Delhi 1985.

Sharad Kulkarni, "Adivasi und die Forstwirtschaft—Gesetzegegen Menschen", *Pogrom*, No. 171, Gesellschaft für bedrohte Völker, Göttingen June/July 1993.

"In Indien verschwindet der Wald am schnellsten", news flash in *epd-entwicklungunspolitik* No.1/93, Evangelischer Pressedienst, Frankfurt/Main, January 1993.

Walter Fernandes, "Power and Powerlessness, Development Projects and Displacement of Tribals", *Social Action*, Indian Social Institute, New Delhi, September 1991.

Amit Mitra, Sumanta Pal, "The Spirit of the Sanctuary", *Down to Earth*, Centre for Science and Environment, New Delhi, 31.1.1994.

S.R. Ramaswamy, "Social Costs of Social Forestry", *Economic and Political Weekly*, Mumbai, 25.6.1988.

"Chipko—An Unfinished Mission", *Down to Earth*, Centre for Science and Environment, New Delhi, 30.4.1993.

Pandurang Hegde, "The Appiko Movement: Forest Conservation in Southern India", *Cultural Survival Quarterly* No.2, Cultural Survival, London 1989.

Author's interview with Chaluwaddi Madegauda, B.R. Hills 5.8.1993.

Author's interview with Kondabai Bhaorao Nivgune, Mangaon 5.4.1994.

Author's interview with Dr. Archana Godbole, Pune 5.4.1994.

Author's interview with Sudesh Devi, Silyara 4.4.1983.

Author's interview with Jagdish Godbole, Pune 12.4.1988.

Author's interview with Babulal Sharma, New Delhi 12.11.1993.

8) Health For All

Dr.N.H. Antia, Kavita Bhatia, *People's Health in People's Hands*, The Foundation for Research in Community Health, Mumbai, 1993.

Beatrix Pfleiderer, "Magische Heilung—Psychotherapie in Indien Indo-Asia", Vol. 24, No.3, *Deutsch-Indische Gesellschaft*, Burg Verlag, Sachsenheim-Hohenhaslach 1982.

Statistisches Bundesamt, (Hrsg.), Länderbericht Indien 1991, Verlag J.B.Metzler/C.E.Poeschel, Wiesbaden 1991.

G.H. Ott, U.Ruscher, "Ayurveda—Zur Diskussion Gestellt", *Münchener Medizinische Wochenschrift* 133, No.5152, MMV Medizin Verlag, München 1991.

Ramesh Menon, Kai Friese, "Traditional Medicine—On the Way to a Healthy Revival", *India Today*, New Delhi 31.3.1994.

Author's interview with Prof. Dr. G.H. Ott, Bonn 26.7.1994.

Author's interview with Darshan Shankar, Karjat 2.4.1994.

Author's interview with Siddhamma, B.R.Hills 30.3.1994.

Author's interview with Dr.H. Sudarshan, B.R. Hills 30.3.1994.

9) Mismanaging Energy

Soutik Biswas, "Gasping for Clean Air", *India Today*, New Delhi, 15.5.1994.

Devendra Chauhan, "2100: An Indian Cataclysm", *Down to Earth*, Centre for Science and Environment, New Delhi 31.7.1994.

Anil Agarwal, Sunita Narain, *Globale Erwarmung in einer Ungleichen Welt*, Durga Press, Indienhilfe, Herrsching 1992.

"Die verpaßte Chance von Singrauli", Documentation by "Erklärung von Bern", Bern 1994.

Anumita Roychoudhury, Rimjhim Jain, "Under International Censure—Singrauli", *Down to Earth*, Centre for Science and Environment, New Delhi, 15.8.1993.

Animal Energy, in *The State of India's Environment 1984-85*, Centre for Science and Environment, New Delhi 1985.

"Achievements, Strategy and Action Plan of MNES", Ministry for Non-Conventional Energy Sources, Government of India, New Delhi 1994.

Usha Rai, Energy That No One Wants", *Indian Express*, Pune, 6.1.1993.

Author's interview with Anil Agarwal, Bonn 26.4.1992.

Author's interview with Smitu Kothari, Delhi 4.5.1988.

Author's interview with Minister of State S. Krishna Kumar, New Delhi 12.4.1994.

10) We are the People!

"One Goal, Two Roads", *Down to Earth*, Centre for Science and Environment, New Delhi 15.4.1994.

Wolfgang Sachs (Ed.), *Wie im Westen so auf Erden, Ein polemisches Handbuch zur Entwicklungspolitik*, Rowohlt Taschenbuch-Verlag, Reinbek 1993.

Author's interview with Prof. Rajni Kothari, Delhi 24.1.1989.

Author's interview with Medha Patkar, Bonn 4.12.1991.

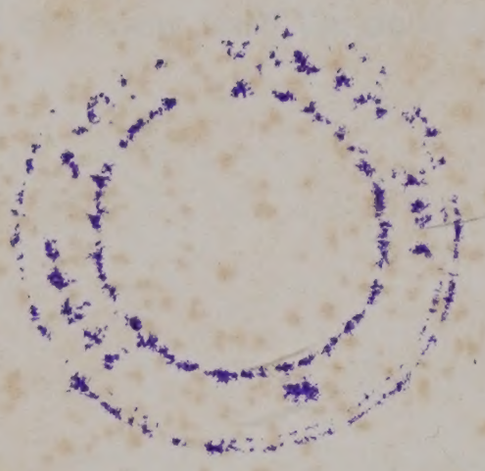
Author's interview with Baba Amte, Kasaravad 15.6.1990.

Author's interview with Celine D'Cruz, Mumbai 15.1.1991.

Author's interview with Bittu Sahgal, Mumbai 7.4.1994.

Author's interview with Anil Agarwal, Bonn 26.4.1992.

Author's interview with Vandana Shiva, Bremen 4.4.1992.



THE OTHER INDIA PRESS

In Gandhi's Footsteps

It has long been recognised that non-party political activists have succeeded in transforming the nature of democracy and politics in India beyond recognition. But books on NGO and activist politics—the so-called Parliament of the Streets—are truly hard to come by. The few that are available hardly reflect the enormous ferment that is convulsing different parts of India.

Rainer Hörig's book on India's social movements—translated for the Indian reader from the original German edition—attempts to meet precisely this gap. A sympathetic outsider, Hörig attempts a detailed inside view of the country's environment agitations and uncovers their active Gandhian roots. Basing himself on extensive travels and interviews with activists like Vandana Shiva, Baba Amte, Anil Agarwal and others, he provides engaging insights into the functioning of India's alternative politics, into what it has been able to achieve and where it has failed. In the end, though a citizen of a so-called advanced industrial economy, he finds himself increasingly critical of his own society's means and ends, proposing instead that Germany might have more to learn from India than it thinks.

About Rainer Hörig

Closely associated with the Green Party and civil rights movements in his home country, German writer Rainer Hörig has developed a keen interest in India's civil society as well. His passionate reports about the Narmada dam controversy earned him a temporary visa ban from the Government of India as well as an award for development-journalism from the German Government in 1991. Subsequently he worked on a temporary assignment as an advisor to a member of the German Parliament, the "Bundestag".

Hörig has been "at home" in India since 1989. He is presently settled with his Indian wife and daughter in Pune.

ISBN No.81-85569-39-8

DIB=100

THE OTHER INDIA PRESS